

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE		PAGE OF PAGES 1 5	
2. AMENDMENT/MODIFICATION NO. 0003		3. EFFECTIVE DATE 09-Nov-2001		4. REQUISITION/PURCHASE REQ. NO. W68MD9-1285-5370		5. PROJECT NO.(If applicable)	
6. ISSUED BY USA ENGINEER DISTRICT, SEATTLE ATTN: CENWS-CT P.O. BOX 3755 SEATTLE WA 98124-3755		CODE DACW67		7. ADMINISTERED BY (If other than item 6)		CODE	
				See Item 6			
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)				X		9A. AMENDMENT OF SOLICITATION NO. DACW67-02-T-0001	
				X		9B. DATED (SEE ITEM 11) 26-Oct-2001	
						10A. MOD. OF CONTRACT/ORDER NO.	
						10B. DATED (SEE ITEM 13)	
CODE		FACILITY CODE					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input checked="" type="checkbox"/> is extended, <input type="checkbox"/> is not extended.							
Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)							
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
A.THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
B.THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).							
C.THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
D.OTHER (Specify type of modification and authority)							
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) Operation & Maintenance of Existing Treatment Plant, Wyckoff/Eagle Harbor Superfund Site, Bainbridge Island, WA 1. The purpose of this Amendment is to incorporate the following: a. Revisions to the Specifications listed below are included herein-							
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) SHARON J GONZALEZ / CONTRACT SPECIALIST			
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA		16C. DATE SIGNED	
_____ (Signature of person authorized to sign)				BY _____ (Signature of Contracting Officer)		09-Nov-2001	

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

- (1) Section 01110
- (2) Section 01150
- (3) Section 01450
- (4) Section 01610
- (5) Section 01830

b. A list of questions submitted following the Site Visit are answered and provided for clarification.

2. The time and date set for receipt of your proposal is extended 1:00 p.m. Local Time, 16 November 2001
3. NOTICE TO OFFERORS: Offerors must acknowledge receipt of this Amendment by number and date on offer or by telegram. Please mark on outside of envelope in which your offer is enclosed to show amendment received.

Questions

1) Are the quantities of NAPL and other hazardous waste listed in the bid spec representative of quantities expected over the next six months?

- Cite the specification section you are inquiring about.

2) For the non-NAPL waste, can you break out the quantities or range of quantities that would be expected for each waste stream?

- Limit your bid to the waste streams identified in the bid schedule.

3) Is all of the non-NAPL now being drummed or is any of it being stored in bulk tanks or containers?

- Currently, waste carbon is stored in Baker tanks and will be disposed of prior to fielded activities specified under this contract.

4) How often are wastes being picked up for disposal?

- Hazardous waste disposal events vary. Restrict your bid to the items specified in the bid schedule.

5) During the site walk, several large Baker tanks were identified that are currently being rented by the existing contractor. We understand that most of those contain carbon and are expected to be removed before the plant is turned over. With the next contractor need to provide similar tanks for temporary carbon storage? If so, how many should be assumed?

- Your bid should not include rent for Baker tanks for carbon storage.

6) Should the costs for the Baker tanks that are not being used for carbon storage be included in our bids? If so, can you let us know what the current rental charges are for these tanks or give us the specifications for these tanks?

- No do not include rental of Baker tanks in your bid if it is not specified in the solicitation.

7) The bid spec (01145 - 1.5.4) indicates (for information purposes) that the current contractor typically has two on-site operators M-F and one operator on the weekend. However, during the site walk we were

told that the current contractor has three operators Tuesday through Thursday, two operators Monday and Friday as well as a full time on-site project manager Monday - Friday. Does the current contractor have additional responsibilities that are not included in this bid specification?

- The current contractor works for another agency. Consequently, we can not address additional duties that may be included in the existing contractor's responsibilities.

8) The bid spec section 1145 - 1.5.3.2 indicates that the contract manager or an operator must be available to meet with the COR both during normal work hours and after normal work hours at the COR's request. It also indicates that these meetings are to be included in the firm fixed price portion of the contract. Can you provide some guidance on the expected frequency of these meetings 1) with the contract manager and 2) with the operator? Also indicate expected frequency of after-hours meetings.

- The meetings would likely occur on site. The paragraph allows for the CM to send a designated alternate if the CM is not available. No such project meeting has been called that required 60 minute response by the CM. The provision is in place to prevent a Contractor from avoiding the COR in the event the government determines an exceptional situation requires immediate response by the Contractor.

9) Section 02120 pg 7 para 1.7.1 This section lists the anticipated wastes that are expected to be generated. What are the historical quantities of each of these wastes and what are the regulatory classifications (are they listed wastes)? Are the historical records for the costs and locations for disposal/treatment of each waste available? The location for treatment is important because it defines the distance from the site which in turn determines whether the material can be stored on site for 90 versus 80 days under the Washington State Waste Regulations (WAC 173-303).

- Limit your bid to the quantities specified in the bid schedule.

10) Section 01450 pg 17 Tables 2 thru 6 The current on-site lab facility is assumed to have the equipment/supplies necessary to do the required on-site lab analysis (glassware, spectrophotometers, reagents, etc.). None of these equipment/supplies are listed as Govt. Furnished Materials in the specifications. Will all of the existing equipment be removed from the site and does the Corps want the bid to include the purchase of all equipment necessary to do the listed on-site lab analysis?

- All of the existing equipment will remain on site. The current Contract is administered by another agency. Consequently, the Corps does not have a current inventory. For bidding purposes, assume all equipment and supplies required to perform the analyses specified will be on site and available.

11) The TSS and TDS samples are listed as off-site analysis in Table 6 and as onsite analysis on Table 3. Are they different process stream sampling locations or is one incorrect ?

- Some of the samples are analyzed on site and others are analyzed off-site. The difference reflects a different data use.

12) Section 01120 Pg 3 Para 1.3.3.1 Does this include leased facilities such as trailers, Baker tanks, etc. or does it only include contractor-owned facilities.?

- This paragraph applies to Contractor owned and leased facilities specified in the paragraph. Since the Contractor's trailer is specifically mentioned, the bid should include costs for demobilization of the office trailer. Tanks are not mentioned and should not be included in the bid.

13) Section 01145 Pg 1 Para 1.1.1 Does the site have a fork lift available on-site, is one ever needed should rental be included in the cost proposal?

- A fork-lift is not available on site and should not be included in the cost proposal.

14) Section 01145 Pg 3 Para 1.5.3.2 The CM or the operator (as determined by the COR) must be available to meet with the COR within 60 minutes notice; Where would the meetings take place, on-site or at E Marginal Way Corps office or elsewhere. Do we need to have the CM at the site within 60 minutes, do we need to have an operator at the Corps office within 60 minutes? How often do you anticipate that these meetings may occur?

- The meetings would likely occur on site. The paragraph allows for the CM to send an designated alternate if the CM is not available. No such project meeting has been called that required 60 minute response by the CM. The provision is in place to prevent a Contractor from avoiding the COR in the event the government determines an exceptional situation requires immediate response by the Contractor.

15) Section 01145 Pg 3 Para 1.6.1 How frequently do you anticipate that this will occur?

- The USACE Site Manager acts as EPA's representative on site and generally conducts tours for visitors. However, the provision is in place to prevent the Contractor from interfering with site access to by inspectors or other authorized visitors.

16) Section 01145 pg 5 , 1.11.2 We are assuming the current storage facility (trailer) for materials described in this section meets the contract specifications in lieu of the NFPA requirements, as stated by the Corps POC during the site walk. Is this correct?

- Yes.

17) Section 01430 Pg 1 Para 1.2.2 This section specifies that certain staffing levels are required, but the section that it references (01145) states that staffing level information is for information only, not required levels. Which is correct ?

- Section 1430 merely states that the staffing must meet the requirements of Section 01145.

18) Section 01451B Pg 3 Para 1.5. What is the likely frequency of these meetings?

- The specification is clear that only one CQC meeting is planned. However, if the Contractor does not perform the QC function properly, then additional meetings will be required.

19) Section 01610, pg 1, Para 1.2.1. What are the materials and equipment required for the thermal remediation pilot study?

- This is an error, the term should be existing treatment plant rather than "thermal remediation pilot study".

20) Section 01610, pg 1, Para 1.2.2 Is there a list of chemicals required for water treatment and historical quantities used, other than the GAC?

- No, refer to the bid schedule for quantities of any other chemicals.

21) Section 01830 pg 2, Para 1.3.2.3 The last sentence references the performance requirement of the contract that must be met. Where are these performance requirements listed?

- See Part 3 - Execution of this Section (01830).

22) Section 01830 pg 4, Para 1.6.2.2 What is the historical percent of time that the plant is operating, and is the historical record the standard that must be maintained under this contract?

- The plant has operated continuously except for brief shut downs during planned maintenance. It is

intended that plant continue to be operated in this manner.

23) Section 01830 pg 2, Para 3.1.3 Are adequate spare parts and equipment already stored on-site to meet this requirement?

- No.

24) Section 01830 pg 10, Para 3.5.5 Does an on-site equipment/ spare parts/supplies list exist? Is the existing supply of off-the shelf materials and equipment deemed sufficient to meet this requirement?

- No.

25) CLIN 005 States 3 carbon unit changes; What is the unit quantity?

- See Section 1270 1.2.5.2.2 and 1.2.6

26) Page 01120-3, paragraph 1.3.2, third bullet states that we will be responsible for submitting monthly, quarterly, and annual reports detailing the results of the quarterly groundwater monitoring, groundwater elevation measurements, amount of product removal and performance of the treatment system. As far as I can tell, this is the only place these reports are mentioned. Do you have any more information about the nature and content of these reports?

- The reporting requirements of this section do not need to be overly elaborate and should include the data collected under Section 1450. A simple narrative with tables presenting data and observations made by the operators is sufficient. (See Section 01830)

27) Page 1830-14, This table indicates that the reactor uses 7,500 pounds of carbon per reactor vessel. In the SOP for carbon loading, it specifies 8,000 pounds and at the site walk, I believe someone said 4,000 pounds. Which is it?

- Use the value specified in section 1830 for your bid.

28) Page 1150-4, paragraph 1.6.5. How many phone lines are there in the Government and Contractor trailers that we will responsible for paying for?

- The Government will pay for their phone lines. The number of phone lines that you require for your Needs is up to you to decide in formulating a competitive bid.

29) Page 1610-3, paragraph 2.1.2. Does this paragraph apply to this contract?

- No

30) How often is are the septic tanks serviced? When were they last serviced?

- The septic system has not required regular service to our knowledge and is not included in this contract.

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SECTION 01110

SUMMARY OF WORK

PART 1 - GENERAL

1.1 GENERAL

1.1.1 This Section provides a summary of the various contract work elements. This summary does not provide the technical detail for particular work activities, but describes the work as a whole, providing overall perspective to the separate tasks and their interrelationships. This Section shall be used in conjunction with all other sections and the attachments thereto to establish the total work requirements.

1.1.2 The Contractor is advised that continuing remediation work will be performed on the Wyckoff/Eagle Harbor Superfund site on Bainbridge, Island Washington and this contract is subject to certain procurement and construction management/oversight responsibilities by the United States Army Corps of Engineers (USACE) that are established under an Interagency Agreement with the United States Environmental Protection Agency (EPA).

1.1.3 Record of Decision

The Record of Decision (ROD), dated February 2000, is the formal decision document for remediation of the soil and groundwater. The ROD defines the cleanup plan as written by the EPA, and agreed to by Ecology. The cleanup plan includes steam injection, extraction and treatment of groundwater, vapor, and NAPL, monitoring the unconfined aquifer; monitoring the quality of groundwater; and monitoring of the liquid and vapor treatment systems. For a copy of the ROD, see the Attachment J6 under Section J.

1.1.4 Objectives

The purpose of this contract is to operate and maintain an existing water treatment plant.

1.2 SUMMARY OF WORK

1.2.1 General

The work consists of the operation and maintenance of an existing treatment plant. Certain monitoring responsibilities will be performed by the Contractor with analytical chemistry support from EPA. The Contractor will assume responsibility for the continued operation and maintenance of the groundwater extraction and treatment for the duration of the contract period. The work shall include operation of the systems, reporting monitoring results, and consulting with USACE and others as directed.

1.2.2 Project O&M Activities

The Contractor shall furnish all labor, supervision, tools, materials, equipment, supplies and consumable items except Government furnished equipment and materials and supplies (See Section 01150, GOVERNMENT FURNISHED PROPERTY, SERVICES, AND UTILITIES and Technical Exhibit TE-2), incidental engineering, and transportation necessary for operation, maintenance, and repair of equipment and support systems of the Treatment Plant and its associated facilities and site works on the Wyckoff/Eagle Harbor Superfund Site in Bainbridge Island, Washington, in accordance with the

requirements specified under this contract. The work shall include treatment of groundwater, removal of product, corrective and preventive maintenance, repair, operation of treatment facilities, report preparation, and other services as specified in these specifications and Technical Exhibits 1 through 4 attached at the end of the Technical Specifications (end of J4). The Contractor shall perform to all standards in the contract. Technical Exhibits 1 and 4 and Attachment J5 provide detailed descriptions of the facilities and site features and methods of operation of existing facilities.

1.2.2.1 Plant Operation

Operate the facility to treat contaminated groundwater at or below the standards specified in Section 01450, CHEMICAL DATA QUALITY CONTROL, to provide for the effective and efficient operation and maintenance of the facility during the contract period. The Contractor shall provide and manage the chemicals and utilities used and required in plant operations. The Contractor shall comply with the specifications.

1.2.2.2 Performance Improvement

The Contractor shall develop and implement procedures such that the treatment process is optimized.

1.2.2.3 Miscellaneous Maintenance

Housekeeping, custodial, and cleanup services, and grounds maintenance of the operating facility and support trailers on site, including the Government office trailer, shall be provided by the Contractor.

1.2.2.4 Contract Data

A component of this contract is the collection and reporting of monitoring data. The Contractor shall prepare submittals as indicated in other sections for the equipment, the Management Plan, and all data collected during the service phase and shall submit the data in an orderly manner to the COR.

1.2.3 Safety

The Contractor shall be responsible for complying with all Federal, state, and local safety standards and shall instruct employees in all appropriate safety measures in regards to (but not limited to) confined space entry, electrical hazards, mechanical equipment hazards, chemical hazards, temperature hazards, explosion and fire hazards, bacterial hazards, oxygen deficiency and noxious gas hazards, and laboratory hazards. The Contractor shall provide all safety equipment required for his employees. All work shall be accomplished in a manner that insures the protection of workers, and public health and safety. See Section 01351, SAFETY, HEALTH, AND EMERGENCY RESPONSE (HTRW/UST) for more detailed requirements.

1.2.4 Environmental

All work shall be accomplished in a manner that insures the protection of the environment; and complies with all environmental requirements and the specification requirements. See Section 01410, ENVIRONMENTAL PROTECTION for specific details.

1.2.5 Documentation And Records

The Contractor shall maintain at the site and furnish copies to the COR of all pertinent data records and reports as described in the specifications including operating logs, maintenance functions, discharge monitoring and analysis, and personnel daily sign-in sheets. All documentation, records, schedules, etc., as described in the specifications that are the responsibility of the Contractor are the property of the Government and shall remain so even upon termination of the contract. The Contractor shall keep these items current at all times. Documentation and records shall be turned over to the Government upon completion of the contract or when requested by the Contracting Officer or designated representative.

1.2.6 Minimum On-Site Operations

1.2.6.1 The extraction and groundwater treatment and related work elements shall be accomplished by the Contractor to meet required cleanup standards per specifications, with full consideration given to maintaining worker safety and health, protecting nearby communities, and mitigating further deleterious impacts to the environment during execution of the work.

1.2.6.2 The Contractor shall perform individual inspection of all process components and electrical and mechanical equipment, including related piping and control systems on a periodic basis not to exceed every month or as needed.

1.2.6.3 A comprehensive testing program shall be implemented by the Contractor during groundwater extraction and treatment to ensure that the groundwater extracted as delineated on the drawings meets required cleanup standards; adequate treatment is consistently achieved; all wastes are properly collected, transported, treated (as required), and disposed; and all appropriate and relevant environmental protection requirements are met.

1.2.6.4 The Contractor shall be responsible for the storage, transport, regeneration, and or disposal of all spent GAC, solid and hazardous waste generated at the site in accordance with Federal, state and local regulations and ordinances for the length of the contract.

1.2.6.5 Any water generated as the result of cleanup activities under this contract shall be collected, tested, and properly treated or disposed per specifications. This shall include water resulting from equipment decontamination and sampling procedures. Contaminated waste, such as used personal protective equipment or disposable sampling tools, and water or solid residues from decontamination activities found by testing to constitute hazardous waste shall be transported off-site for treatment (as required) and disposal at an approved treatment, storage, and disposal (TSD) facility.

1.2.6.6 The Contractor shall be responsible for maintaining all permits for off-site activities as required, and complying with all substantive requirements of the permit process for site work.

1.2.7 Miscellaneous Work Items

1.2.7.1 Implementing the existing and revising as needed the Management Plan (MP), composed of the plans and designs as listed in Section 01401: MANAGEMENT PLAN AND FIELD REPORTS.

1.2.7.2 Arrangements for securing the work site through coordination with the Contracting Officer (CO).

1.2.7.3 Demobilizing and decontaminating materials and equipment during cleanup operations, including all required off-site disposal of wastes.

1.2.7.4 Reporting as required in Section 01450 CHEMICAL DATA QUALITY CONTROL, and other sections as applicable.

1.2.7.5 Extraction, testing, and treatment of contaminated groundwater, ~~and the testing of residual groundwater,~~ to the limits shown in the drawings and defined in the specifications.

1.3 TRANSITION OF WORK AND CONTRACT INTERFACE

Refer to Section 01120 CONTRACT TRANSITION AND INTERFACE.

1.4 COORDINATION WITH WORK BY OTHERS

Work by others is anticipated to be performed in the vicinity or within the project site in concurrence with the scheduled performance of Work under these Contract Documents. CONTRACTOR shall coordinate the Work with other contractors to minimize conflicts and to maintain a cooperative effort in completion of the Work. Other work activities include but are not limited to the following:

A contractor performing Site Infrastructure Support construction work on the uplands and beaches at Wyckoff, including installing Phase III of the subtidal cap near the Log Rafting Area and the Mitigation Beach in Eagle Harbor.

A contractor installing ~~subsurface instrumentation the Distributed Temperature System (DTS)~~ in the ~~future~~ pilot area and support Zone at Wyckoff.

A contractor installing equipment and materials for the construction of the ~~future~~ Thermal Remediation Pilot contract.

Government forces installing subsurface monitoring equipment.

Diving services provided by Government (Navy) divers or a contractor.

Other miscellaneous contract work.

1.5 REPLACEMENT AND MODERNIZATION

During the term of this contract, the Government may replace, renovate, or improve equipment, systems, facilities, components, and fixtures at the Government's expense and by means other than this contract. All replaced, improved, updated, modernized or renovated equipment, fixtures, facilities, components and systems shall be maintained, operated and /or repaired by the Contractor at no additional cost to the Government unless such changes result in an increase or decrease in contract requirements. Changes, replacements, or deletions which result in an increase or decrease in contract requirements will result in adjustments to the applicable contract price(s) in accordance with the CHANGES clause.

PART 2 - PRODUCTS NOT USED

PART 3 — EXECUTION (NOT USED)

END OF SECTION

SECTION 01150

GOVERNMENT FURNISHED PROPERTY, SERVICES, AND UTILITIES

PART 1 GENERAL

1.1 GENERAL

In accordance with the "GOVERNMENT PROPERTY (FIXED-PRICED CONTRACTS)" clause in Section I, the Government will provide the Contractor the use of certain Government owned facilities, equipment, and materials for use only in connection with this contract. The use of Government furnished property and services for other purposes are prohibited. All such facilities, equipment, materials and supplies will be provided in "as is" condition. The availability of Government furnished items and services is identified in this section and in Technical Exhibit 2.

1.2 TEMPORARY FACILITIES

The Contractor shall provide temporary facilities for administrative, office or storage facilities for its own use and for Government use as specified.

1.2.1 Government Furnished Facilities

The Government will not provide office space, laboratory space, and operational facilities (except as described under Technical Exhibit 2, Section 01501 and Drawing plate C1.1) to the Contractor. The Contractor is responsible, at his/her expense, to secure and maintain the necessary office space and other facilities required for the performance and management of this contract.

1.2.2 Contractor Furnished Temporary Facilities

1.2.2.1 Administrative Field Offices

A designated site will be available for the Contractor inside the support zone to provide and maintain administrative field office and storage facilities for Contractor and Government activities within the project area. Utility hook-ups for water, sewer, electricity and phone are available at prescribed locations in the trailer support zone. See Section 01501, TEMPORARY FACILITIES AND CONTROLS.

1.2.2.2 Appearance of Trailers

Trailers utilized by the Contractor or furnished by the Contractor for Government use for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the property.

1.2.2.3 Maintenance of Temporary Facilities

All temporary facilities provided by the Contractor during the contract period, including the Government field office or storage units shall be maintained by the Contractor including space heat, electric light and power, local telephone and toilet facilities, waste pickup and disposal.

1.2.3 Disposition of Temporary Facilities

All storage trailers, office trailers, meters, and excess materials not designated to remain as Government property, and debris shall be removed and the site left in a condition acceptable to the Contracting Officer prior to final contract payment. Demobilization from the site shall be considered an incidental cost and will not be separately priced regardless of when the demobilization occurs.

1.3 GOVERNMENT FURNISHED EQUIPMENT

1.3.1 The Contractor shall furnish all tools and equipment required for the performance of this contract. Government furnished equipment includes all existing equipment at the treatment plant. If at any time the Government has available any tools or equipment for use in the performance of this contract and the Contractor chooses to use all or any item of this equipment then the following shall apply:

1.3.1.1 The Contractor shall be responsible for the periodic servicing, maintenance and repair of the equipment at no cost to the Government, and the total or partial breakdown or failure of the Government furnished equipment shall not relieve the Contractor of the requirement to fully perform the work of the contract. Upon completion or termination of the contract, all Government owned equipment shall be returned to the Government in the same condition as received, except for normal wear and tear. Equipment which becomes worn out due to normal wear and tear shall be returned to the Government and its replacement shall be the responsibility of the Government if it so chooses. Failure of the Government to replace any Government Furnished Equipment or the non-availability of a replacement item shall not relieve the Contractor of responsibility to fully perform the requirements of the contract. The Contractor shall be responsible for the cost of any repairs or replacement caused by negligence or abuse by the Contractor or his/her employees.

1.3.1.2 The Contractor and the Government Representative shall conduct a joint inventory under this contract to determine the exact number and serviceability of any Government furnished equipment. The Contractor shall then certify the findings of this inventory, assume accounting responsibility, and subsequently report inventory discrepancies to the Government Representative. Government furnished equipment shall not be removed from the work site unless approved by the CO in writing.

1.4 GOVERNMENT FURNISHED MATERIAL

1.4.1 The Government will furnish the material described in Technical Exhibit 2 to the Contractor on a one time basis. Should the Contractor choose to use the Government furnished material, a joint inventory shall be conducted with the Contracting Officer before commencing work under this contract to determine the exact amount and serviceability of Government furnished materials. The Contractor shall then certify the findings of this inventory, assume accounting responsibility for all materials supplied, and shall provide documentation supporting issue/use of such material.

1.4.2 On depletion of material provided to the Contractor by the Government, as listed in TE-2, the Contractor shall furnish all material to perform the work of the contract, except as otherwise specified herein. On completion or termination of this contract a second joint inventory shall be conducted, if necessary, of all unused Government furnished materials, as listed in TE-2. The Contractor shall be held liable for all materials missing which cannot be accounted for by issue/use documentation.

1.4.3 The Government may require the Contractor to stock certain selected items of long lead time parts and materials to insure repair of critical equipment in the event of failure. If critical equipment spare items are required the Government will pay the full cost of such items initially acquired by the Contractor. The Contractor shall then maintain at least the minimum quantity of all the items specified. These items shall be used by the Contractor in the maintenance and repair of the facilities/systems only as follows:

- (a) Critical reserve items shall be used on the systems or facilities, with which they are associated.
- (b) A replacement critical reserve item shall be ordered within three working days after the use of any critical reserve item that causes the total quantity on hand to fall below the minimum specified level. The Contractor shall bear the cost of replacement of all critical reserve items.
- (c) On completion or termination of the contract, all critical reserve items shall be returned to the Government in at least the minimum specified quantities.

1.5 SERVICES

The Contractor is responsible under the firm fixed-price portion of the contract for all services not identified as provided by the Government.

1.5.1 Refuse Containers and Collection. No Government service is available. The Contractor shall obtain the services of a waste disposal service for this requirement.

1.5.2 Grounds and Building Maintenance. No Government service is available. General maintenance of the treatment facilities, pilot support facilities, and the site perimeter fence shall be provided by the Contractor. No grounds maintenance of the site will be the responsibility of the Government.

1.5.3 References and Technical Documentation.

1.5.3.1 Additional Data. In addition to the data included in Section J Attachments for the Contractor's use the following items will also be provided, after award of the contract, upon request to the Contracting Officer:

- a. Floor plans and related facility and equipment manufacturer's literature, where available.
- b. Utility systems drawings will be available for review, where available.

1.5.4 Government-Furnished Forms. Standard forms may be provided by the COR or proposed forms may be submitted by the Contractor for approval.

1.5.5 Insect and Rodent Control. The Contractor shall provide insect and rodent control for all Government-furnished facilities. The Contractor shall notify the COR when an insect or rodent problem is detected.

1.6 UTILITIES

The Contractor is responsible under the firm fixed-price portion of the contract for all utilities services not identified as provided by the Government.

1.6.1 Utilities. No utility services will be furnished by the Government except as specified herein. The Contractor shall obtain all required services from the appropriate utility companies.

1.6.2 Water. See Section 01501 TEMPORARY FACILITIES AND CONTROLS, paragraph, "Availability Of Utility Services."

1.6.3 Sewer. There are two septic tanks and an on-site drain field which support the trailers in the support zone only. The sewer connections are provided at each hook-up in the trailer support zone. ~~Contractor is responsible for routine maintenance and periodic pumping of the septic tanks during the life of this contract as an incidental cost.~~

1.6.4 Electrical. See Section 01501 TEMPORARY FACILITIES AND CONTROLS, paragraph, "Availability Of Utility Services."

1.6.5 Telephone. Telephone hook-ups are available at the trailer support zone. Contractor shall be responsible for all installation and monthly service fees for its usage. ~~including for the Government trailers, except the Government will reimburse the Contractor for the costs of all long distance charges for Government office facilities.~~

1.7 SUPPLIES

The Contractor is responsible under the firm fixed-price portion of the contract for all supplies not identified as provided by the Government or identified as specific line items.

02006

Existing Treatment Plant O&M, Wyckoff/Eagle Harbor Superfund Site

PART 2 PRODUCTS and PART 3 EXECUTION

Not Used.

END OF SECTION

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SECTION 01450

CHEMICAL DATA QUALITY CONTROL

PART 1 GENERAL

This Section describes the Contractor's chemical data quality control responsibilities for the duration of the contract period. The operation of the Groundwater Treatment Plant (GWTP), and water extraction system will be an integral part of the overall Contractor responsibilities for the Groundwater Treatment Plant Operations and Maintenance contract. General site data and the substantive requirements of the NPDES permit for the site are provided in Attachment A.

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 266	Boiler and Industrial Furnace Standards, Subpart H
40 CFR 268	Land Disposal Restrictions
49 CFR 172	Hazardous Material Table, Special Provisions, Hazardous Material Communications, Emergency Response Information, and Training Requirements
49 CFR 178	Specifications for Packaging

U.S. ARMY CORPS OF ENGINEER MANUAL (EM)

EM 200-1-1	(1994) Validation of Analytical Chemistry Laboratories
EM 200-1-2	(1998) Technical Project Planning Process
EM 200-1-3	(2001) Requirements for the Preparation of Sampling and Analysis Plans
EM 200-1-3 Appendix I	(2001) Shell for Analytical Chemistry Requirements
EM 200-1-6	(1997) Chemical Quality Assurance

U.S. ARMY CORPS OF ENGINEERS ENGINEER MANUAL (ER)

ER 1110-1-263 (1998) Data Quality Management for Hazardous, Toxic,
Radioactive Waste Remedial Activities

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA-600/4-79-020 (1983) Methods for Chemical Analysis of Water and Wastes

EPA 540/P-87/001 (1987) A Compendium of Superfund Field Operations
Methods

EPA 540/R 94-012 (1994) Contract Laboratory Program National Functional
Guidelines for Inorganic Data Review

EPA 540/R 94-013 (1994) Contract Laboratory Program National Functional
Guidelines for Organic Data Review

EPA SW-846 (Rev O; updates I, II, IIA, IIB, and III) Test Methods for
Evaluating Solid Waste (Vol IA, IB, IC, and II)

1.2 ACRONYMS

ASTM	American Society for Testing and Materials
CLP	Contract Laboratory Program
COPC	chemical of potential concern
CPT	cone penetrometer testing
DCQCR	daily chemical quality control report
DNAPL	dense nonaqueous-phase liquid
DQO	data quality objective
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
FSP	field sampling plan
IC	Inorganic Carbon
GC/FID	gas chromatography/flame ionization detector
GSA	General Services Administration
GWTP	Groundwater Treatment Plant
LCS	laboratory control sample
LNAPL	light nonaqueous-phase liquid
MDL	method detection limit
ML	method quantitation limit
MRL	method reporting limit
MS/MSD	matrix spike/matrix spike duplicate
NAPL	nonaqueous-phase liquid
OU	operable unit
PAH	polycyclic aromatic hydrocarbon
PCP	pentachlorophenol
PID	photoionization detector
PM	project manager

QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RI	remedial investigation
RI/FS	remedial investigation/feasibility study
RPD	relative percent difference
SAP	sampling and analysis plan
SOP	standard operating procedure
SVOC	semivolatile organic compound
TOC	total organic carbon
TPH	total petroleum hydrocarbon
USACE	U.S. Army Corps of Engineers

The definition of acronyms used by the Contractor that pertain to chemical data quality control shall be clearly defined for all contract related products and communications.

1.3 MEASUREMENT AND PAYMENT

Separate payment will not be made for providing and maintaining the chemical data quality requirements including the chemical data quality management, minimum chemical data reporting requirements, and chemical data quality submittal requirements; these costs shall be included in the applicable unit prices or lump sum prices contained in the Schedule and as described in Section 01270 MEASUREMENT AND PAYMENT.

1.4 CHEMISTRY REQUIREMENTS

Chemical Data Quality Control (CDQC) shall be as defined in ER 1110-1-263; this ER, which integrates USACE guidance on the subject, shall be supplemented by EM 200-1-6 for detail technical guidance on CDQC.

1.4.1 Site History

SITE LOCATION AND DESCRIPTION

The Wyckoff/Eagle Harbor Superfund site is located on Bainbridge Island, Washington, on the southern shoreline near the entrance to Eagle Harbor. The site has been divided into four operable units (OUs):

- Wyckoff Soil OU: surface and subsurface soil extending to the maximum elevation of the water table (or other fluid boundary) including the Former Process Area and the Log Peeler / Log Storage area
- Wyckoff Groundwater OU: subsurface soil and groundwater beneath the maximum elevation of the water table (or other fluid boundary) extending toward Eagle Harbor and including groundwater contaminated by fluids migrating from onshore from the Former Process Area and the Log Peeler / Log Storage Area
- West Harbor OU: intertidal and subtidal surface sediments located within the West Harbor OU boundary

- East Harbor OU: intertidal and subtidal surface sediments located within the East Harbor OU boundary

The Wyckoff property occupies approximately 57 acres (about 18 of which encompass the Soil OU), including a spit with about 0.8 miles of shoreline extending northward into Eagle Harbor. The spit was extended and filled at least twice prior to the 1950s, and was the location of wood treatment activities that have caused the current soil and groundwater contamination.

The Wyckoff Soil and Groundwater OUs occupy a relatively flat lowland and intertidal area bounded by a densely vegetated bluff on the south. The lowland area has an average elevation of approximately 10 feet NGVD while the hillside area rises to elevations above 200 feet. A small stream flows north from the hills above the western arm of the property into a culvert that discharges into Eagle Harbor. The north and west portions of the spit are bounded by Eagle Harbor, and Puget Sound abuts the eastern margin of the spit.

SITE HISTORY

Prior to 1904, the Wyckoff property was owned by a sand mining operation, and a brickyard. From 1904 through 1988, the site was used for the treatment of wood products (e.g., railroad ties and trestles, telephone poles, pilings, docks and piers) by a succession of owners and companies. Chemicals used at the site include creosote, pentachlorophenol (PCP), solvents, gasoline, antifreeze, fuel, waste oil and lubricants. These chemicals were stored in above-ground storage tanks, conveyed through above- and below-ground piping, disposed in sumps, spilled and buried on site.

EPA began an investigation of the property in 1971, and the site was subsequently placed on the National Priority List (in 1987). In 1988, the Wyckoff Company ceased all operations on the property. In 1993, EPA assumed management of the soil and groundwater OUs, and in 1994 the assets of the former Wyckoff Company (now Pacific Sound Resources) were placed into an environmental trust.

All wood-treatment structures in the lowland portion of the site, including buildings, foundations, tanks, pipelines and sumps, were removed between 1988 and 1997. The West Dock was removed in December 1998. A groundwater treatment plant, monitoring and extraction wells, and a conveyance piping system for contaminant recovery and control are in place and in use.

In 1989, Pacific Sound Resources (PSR) completed the design and construction of the existing GWTP in response to EPA's Consent Decree No. 1088-02-17-106. EPA subsequently assumed responsibility for operation and maintenance of the GWTP and the groundwater extraction system in November 1993. At EPA's direction, on-site O&M contractors have made several substantial changes to the treatment and extraction systems in an effort to prevent deterioration of the existing systems and minimize potential releases of hazardous materials to the environment.

1.4.2 Data Quality Objectives (DQO)

Sample acquisition, chemical analysis and chemical parameter measurements shall be performed so that the resulting data meet and support data use requirements for three primary objectives:

- Performance monitoring to evaluate system efficiency and performance through measurement of specific parameters of influent and effluent of selected process units.

- Chemical compliance monitoring to determine if the discharge limitations required by the Groundwater OU ROD are being met through the quality of effluent being discharged to Puget Sound.
- Biological compliance monitoring (biomonitoring) to demonstrate compliance with Washington State Whole Effluent Toxicity Testing and Limits (WAC 173-205) through measurement of acute and chronic toxicity affects of effluent on selected aquatic organisms.

Chemical data shall be acquired, documented, verified and reported to ensure that the specified precision, accuracy, representativeness, comparability, completeness and sensitivity requirements are achieved.

1.4.3 Sampling, Analysis and Measurement

1.4.3.1 Performance Monitoring Samples

The Contractor shall collect weekly water samples from seven selected sampling points within the GWTP. Table 1 provides a description of each sampling location. Samples will be collected on Monday of each week. Samples shall be collected on alternate days during holidays or if plant activities interfere with the sampling schedule. The performance monitoring schedule and list of parameters to be analyzed for at each sampling location is presented in Table 2.

Sample ports consist of ball valves are located at every sampling location except for Aeration Tank, SP-5. At these sampling ports, the ball valve shall be opened and flushed for approximately 30 seconds prior to sampling. Grab samples shall be collected by filling sample jars directly from the valve at the sampling port.

At SP-5, a sample shall be collected from the approximate center of the tank under at least 1 foot of water using a plastic container attached to an extension pole. The container will be rinsed before and after sampling with plant water to clean solids from the container. This sample shall be analyzed on-site for physical parameters only. The number and type of performance monitoring analyses and the number of analyses to be performed each week is presented in Table 3. Sample handling requirements for performance monitoring is presented in Table 4.

Samples analyzed by the off-site laboratory shall be conducted by a Government laboratory. Analyses listed in Tables 3 and 4 for on-site analysis are the responsibility of the Contractor.

1.4.3.2 Compliance Monitoring Samples

GWTP final effluent shall be samples once a week for chemical compliance monitoring. Samples shall be collected on Monday of each week, except holidays when samples shall be collected and shipped on Tuesday. A 24-hour composite sample is required for compliance PAH, PCP and total suspended solids analysis. Partially composited samples shall be maintained at 4°C during the 24-hour period. A grab sample is required for total dissolved solids. One field duplicate sample shall be collected every 4 weeks. Field blanks and extra volume for MS/MSD shall be collected once every 4 weeks. MS/MSD samples shall be collected only for analyses of PAHs and PCP.

Grab samples shall be collected from sampling location SP-11, which is a sample tap located on the pipe that drains the effluent storage tank, Tank 303. Composite samples shall be collected using the existing automated sampler. Prior to composite sampling, temperature, pH, and dissolved oxygen shall

be measured at the sampling port. The automated composite sampling unit shall be properly programmed to collect 1/8th of the total volume required every 3 hours for 24 hours. Table 5 presents the volumes required for primary samples, field duplicates and MS/MSDs. The sampler shall be periodically observed when operators are on duty to ensure it is operation properly. Once composite sampling is complete, individual sample jars shall be filled directly from the composite sampling container. Field parameters shall be measured again from a separate container, and a grab sample for total dissolved solids shall be collected.

The chemical compliance monitoring sampling schedule is presented in Table 6 with sample handling requirements described in Table 7.

1.4.3.3 Biological Compliance Monitoring Samples

GWTP final effluent samples for biomonitoring will be collected using the existing automated composite sampler connected to the 4-inch diameter steel pipe that drains final effluent tank T-303. The capacity of the automated sampler is 5 gallons. The total volume of sample required for biomonitoring is as much as 7.5 gallons. An additional 5 gallons shall be required for split samples that shall be collected for chemical compliance monitoring (see previous section). Consequently, the automated sampler shall be programmed to collect 5 gallons during an 8-hour period, so that an accumulated volume of 15 gallons shall be collected over a 24-hour period. Each sample container (for both biomonitoring and chemical analyses) shall be filled to 1/3 of the total volume from each 5-gallon composite sample.

Specific test procedures and protocols are presented in Table 8. Specific sample container and sample handling requirements are presented in Table 9. Samples shall be shipped via overnight courier so that analyses can begin with the 36-hour holding time specified by the biomonitoring methods. Analyses of biomonitoring samples shall be conducted at the Contractor's laboratory.

1.4.3.4 Borrow or Fill Material Samples

Not used.

1.4.3.5 Investigation Derived Waste Samples

Not used.

1.4.3.6 Waste Characterization Samples

Material shipping manifesting shall be in accordance with 40 CFR 261, 40 CFR 262, 40 CFR 268, 49 CFR 172, and 49 CFR 178. Manifesting samples shall be collected and analyzed according to Section 02120 TRANSPORTATION AND DISPOSAL OF HAZARDOUS AND NON-HAZARDOUS MATERIALS.

1.4.3.7 Field Instrumentation and Methods

Descriptions of the use of selected field monitoring instrumentation shall be consistent with the reference A Compendium of Superfund Field Operations Methods (EPA/540/P-87/001; December 1987). The instruments, equipment and field analytical methods used during this project shall be operated, calibrated and maintained according to the manufacture's guidelines and recommendations. Operation, calibration and maintenance shall be performed by personnel who have been properly

trained in these procedures. A routine schedule and record of instrument calibration and maintenance shall be maintained throughout the duration of this project.

The specific calibration procedures and calibration frequency and analytical method QC checks for each method specified in the Government furnished QAPP shall be followed. At a minimum, instrument calibration will be checked daily and recalibrated if a reading is found outside established control limits.

1.4.3.8 Compatibility Field Testing for Bulking Operations

Not used.

1.4.3.9 Demolition Samples

Not used.

1.4.3.10 Field Screening

Not Used.

1.5 QUALITY ASSURANCE ELEMENTS

The Contractor shall be responsible for the following QA elements necessary to monitor and ensure the quality of chemical data produced.

1.5.1 Laboratory Validation Requirements

The Contractor shall propose three laboratories to perform analyses for biomonitoring. The laboratories must have possess current USACE or Washington State certification to perform the tests specified in this section. All three proposed laboratories must be listed in the SAP amendment required in this section within 14 days of NTP. If a proposed laboratory cannot meet the specified analytical requirements or achieve the required validation or certification requirements, the Contractor shall request laboratory approval from the COR.

1.5.2 Quality Assurance Sample Collection and Analysis

Not used.

1.5.3 Performance Evaluation Samples

Not used.

1.5.4 Review of Contractor Laboratory Data

The Contractor shall be responsible for the independent data review of the entire data set provided by the Contractor's laboratory. The Government will validate analytical results from the Government laboratory.

To ensure that project data are sufficient to meet both qualitative and quantitative DQOs, laboratory data deliverables permitting a data quality assessment are required.

Information provided will be sufficient to review the data with respect to:

- Holding times and conditions
- Control response (biomonitoring)
- Initial and continuing calibration
- Surrogate recoveries
- Detection/quantitation limits
- Laboratory duplicates and MS/MSDs
- Precision and accuracy
- Representativeness
- Comparability
- Completeness
- Method SOP adherence
- Statistical interpretation (biomonitoring)

1.5.5 Validation of Data

Not used.

1.6 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL OF CONTRACT DATA:

Sampling and Analysis Plan; GA.

The Contractor shall accept the existing SAP including the Field Sampling Plan (FSP) and the Quality Assurance Project Plan (QAPP), after receipt of notice to proceed as part of the Management Plan described in Section 01401. The Contractor may make recommendations for altering the SAP after 90 days. Alterations in the SAP or any of the SOPs contained in the SAP shall only be made after technical review by the Government and with approval of the COR.

Weekly Field Chemistry Data Package; GA

A weekly field chemistry data package shall be provided to the COR every 7 days of the project. All field chemical data packages shall be submitted as paper hard-copies and in an Excel spreadsheet. The COR shall approve the format of the electronic data submittal. The report shall include a summary of on-site analytical results obtained by the Contractor during the previous 7 days, and a data quality assessment report for all on-site data collected and analyzed during the previous 7 days. In addition the weekly chemistry data package shall include the following:

- a. Summary of any deviations from the design chemical parameter measurement specifications.
- b. Summary of chemical parameter measurements performed as contingent measurements.
- c. Summary discussion of resulting data including achieving data reporting requirements.

- d. Summary of achieving project specific DQO.
- e. Presentation and evaluation of the data to include an overall assessment on the quality of the data for each method and matrix.
- f. Internal QC data generated during the project, including tabular summaries correlating sample identifiers with all blank, duplicates, laboratory control samples, and batch identifiers.
- g. A list of the affected sample results for each analyte, where sample results are negatively impacted by adverse quality control criteria.
- h. Summary of field laboratory oversight activities, providing a discussion of the reliability of the data, QC problems encountered, and a summary of the evaluation of data quality for each analysis and matrix as indicated by the laboratory QC data and any other relevant findings.

Biological Compliance Monitoring; GA

The Contractor shall provide a Biological Compliance Monitoring Report to the COR 30 days after each quarterly biomonitoring sampling event. The report shall include at a minimum:

- a. Summary of any deviations from the designed chemical and biological parameter measurement specifications.
- b. Summary of chemical physical parameter measurements performed as directed by the biomonitoring test protocol.
- c. Summary discussion of resulting data including achieving data reporting requirements.
- d. Summary of achieving project specific DQO.
- e. Presentation and evaluation of the data to include an overall assessment on the quality of the data for each test method.
- f. Internal QC data generated during the project, including tabular summaries correlating sample identifiers with all blank, duplicates, laboratory control samples, control samples and batch identifiers.
- g. A list of the affected sample results for each biomonitoring test, where sample results are negatively impacted by adverse quality control criteria.
- h. Summary of field laboratory oversight activities, providing a discussion of the reliability of the data, QC problems encountered, and a summary of the evaluation of data quality for each analysis as indicated by the laboratory QC data and any other relevant findings.

Chemical Data Final Report; GA.

The CDFR shall be submitted, within 30 days of completing work at the site, before final payment. Each report shall be labeled with the contract number, project name and location.

1.7 QUALIFICATIONS

1.7.1 Chemical Quality Control Officer

As a minimum, the Contractor's Chemical Quality Control Officer shall have: a BS degree in Chemistry, Biology, Environmental Science or Environmental Engineering; 5 years of experience related to investigations, studies, design and remedial actions at HTRW sites; and 2 field seasons (or one continuous calendar year experience) in calibration and operation of various field monitoring devices as well as standard analytical chemistry methods common for analyzing soil, water, air and other materials for chemical contamination assessment, including hazardous waste manifesting. The Chemical Quality Control Officer shall ensure that all field chemistry and biomonitoring related objectives including responsibilities for DQO definitions, sampling and analysis, project requirements for data documentation and validation, and final project reports are attained. The Chemical Quality Control officer need not be present onsite during routine sampling, but shall be available for consultation with Government and Contractor personnel. This is considered a part time position. The individual assigned as Chemical Quality Control Officer may also have other contract duties.

1.7.2 Project Chemist

As a minimum, the Contractor's Senior Chemist shall have: a BS degree in Chemistry, Biology, Environmental Science or Environmental Engineering; 5 years of experience related to investigations, studies, design and remedial actions at HTRW sites; 2 field seasons experience in calibrating and operating various field monitoring devices. The project chemist shall ensure that all chemistry related goals of the program are attained. The project chemist need not be onsite during all sampling events but shall be available for consultation with Government and Contractor personnel. This is considered a part time position. The individual assigned as Project Chemist may also have other contract duties.

1.7.3 Environmental Sampler

As a minimum, the Contractor's Environmental Sampler shall have: an Associates degree in Chemistry, Environmental Science, Engineering, Geology, Hydrology, or a related field or 2 years of experience in the development and preparation of SAP and work plans; 2 years of experience in and knowledge of EPA methods for collecting environmental and hazardous waste samples; 2 years of experience in operation of field screening equipment (e.g. PID, FID, infrared spectrometer, immunoassay, etc.); and 2 field seasons of experience with the particular field screening techniques for use on this project. The Environmental Sampler shall collect all onsite samples and perform all field screening tests. The Environmental Sampler shall review the sampling results, and provide recommendations for the Contractor's sampling program. The Environmental Sampler shall be onsite during all sampling activities. This is considered a part time position. The individual assigned as Environmental Sampler may also have other contract duties.

1.8 COORDINATION MEETING

After the prework conference, before any sampling or testing, the Contractor and the Contracting Officer will meet at Seattle District office to discuss the CQC Plan and the SAP. The coordination meeting will be simultaneous to any CQC coordination meeting required in Section 01451B CONTRACTOR QUALITY CONTROL-SERVICES unless otherwise indicated or directed. A list of definable features that involve chemical measurements shall be agreed upon. At a minimum, each matrix (soil, water, air, containerized wastes, instrumental chemical parameter measurement, etc.) shall be a definable work feature. Management of the chemical data quality system including project DQO, project submittals, chemical data documentation, chemical data assessment, required sampling and analysis protocols, and minimum data reporting requirements shall be agreed upon. The meeting will serve to establish an interrelationship between the Contractor's chemical data quality management and Government chemical quality assurance requirements and the EPA Region 10 Laboratory. Minutes of the meeting will be documented by the Government and shall be signed by both the Contractor and the Contracting Officer. The minutes will include any or all unresolved chemical issues along with the conditions for resolution and will become a part of the contract file.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor shall be responsible for chemical sample acquisition, sample analysis conducted by the non-government laboratory, instrumental measurements of chemical parameters and for chemical data quality control. An effective chemical data quality control system shall be established that meets the requirements for the chemical measurement DQO applicable to the project. The system shall cover chemical measurements pertaining to and required for Contractor and subcontractor produced chemical data. The Contractor shall control field screening, sampling, and testing in conjunction with remedial activities to meet all DQOs.

3.2 QUALITY CONTROL PLAN

3.2.1 General

In addition to the quality control requirements specified in Section 01451B CONTRACTOR QUALITY CONTROL-SERVICES, the CQC Plan shall incorporate the qualifications, authority and responsibilities of all chemical quality management and support personnel. Chemical measurements including sampling and/or chemical parameter measurement will not be permitted to begin until after production and acceptance of the CQC Plan, and acceptance of the Government furnished SAP.

3.2.2 Chemistry Elements of the CQC Plan

To cover contract related chemical measurements by the Contractor and all subcontractors, the CQC Plan shall include the following as a minimum.

3.2.2.1 Qualifications

Names, education, experience qualifications, authorities, and decision-making responsibilities of all chemical quality management and support personnel. The CQC Plan shall contain a copy of a letter

from the project QC manager designating and authorizing a Chemical Quality Control Officer and chemical quality control organization staff.

3.2.2.2 Authority and Responsibility

A diagram, flow chart, or figure clearly depicting the chemical data quality management and support staff and the authority and responsibility of each for chemical sampling and analysis, procedures for corrective actions, deliverables and submittals, deviations and changes, chemical quality documentation, data validation, minimum data reporting requirements, and DQO for chemical parameter measurement by the Contractor and subcontractors. The contents of this section of the CQC Plan shall be included in the applicable "Project Organization" elements of an amendment to the Government furnished FSP and QAPP.

3.3 SAMPLING AND ANALYSIS PLAN

The Government shall provide an existing SAP. The existing SAP delineates the methods the Contractor shall use to accomplish the chemical quality control items to assure accurate, precise, representative, complete, legally defensible and comparable data. The SAP describes all chemical parameter measurements for all matrices for all phases of the remediation contract. As a single interrelated document, the SAP shall be provided to field and laboratory personnel. The Contractor may propose original/innovative approaches to chemical parameter measurements for cost reduction and remediation efficiency by abbreviated sampling, contingency sampling and/or contingency analysis, indicator or tracer analysis, onsite analytical services, equivalency or screening methods after 90 days from notice to proceed. An amendment to the SAP shall be prepared by the Contractor within 14 days of NTP to clearly identify the Contractor obtained laboratories and key personnel as described in paragraph 3.2.2.2 of this Section. The Contractor shall furnish copies of the Government approved SAP to all laboratories and the Contractor's field sampling crew. Acceptance of the Government furnished SAP shall confirm the Contractor's understanding of the contract requirements for chemical data quality control, and shall describe procedures for field sampling and sample submittal for analysis, field chemical parameter measurement, data documentation, data assessment and data reporting requirements.

3.4 CHEMISTRY DATA PACKAGE

The chemistry data package shall be produced and provided through USACE COR to the USACE operations team. The chemistry data package shall contain information to demonstrate that the project's DQO have been fulfilled. The QA function will assess the Contractor's compliance with the SAP, and will recommend corrective action as necessary.

3.5 CONTROL OF CHEMICAL DATA QUALITY

Contractor chemical data quality control shall ensure that a quality control program is in place that assures sampling and analytical activities and the resulting chemical parameter measurement data comply with the DQO and the requirements of the SAP. The Contractor shall utilize the three-phase control system that includes a preparatory, initial and follow-up phase for each definable feature of work. The Contractor's three-phase chemical data control process shall ensure that data reporting requirements are achieved and shall be implemented according to Section 01451B CONTRACTOR QUALITY CONTROL-SERVICES.

3.6 ANALYTICAL TESTING LABORATORIES

The Contractor shall propose the analytical laboratories to be used for the biomonitoring and chemical sample analyses not performed by the government laboratory. Laboratory validation requirements shall be in accordance with paragraph LABORATORY VALIDATION REQUIREMENTS. The Contractor may utilize its own laboratory or utilize subcontract laboratories to achieve the biomonitoring or chemical sample analyses.

3.6.1 Laboratory Analytical Requirements

The Contractor shall provide the specified chemical analyses by the Contractor's laboratory. The Contractor shall provide chemical analyses to achieve the project DQO for all parameters specified by the methods. To give the USACE programs the greatest flexibility in the execution of its projects, the EPA SW-846 methods are generally the methods employed for the analytical testing of environmental samples. These methods are flexible and shall be adapted to individual project-specific requirements and the requirements of EM 200-1-3 Appendix I Shell for Analytical Chemistry Requirements (2001).

3.6.2 Laboratory Performance

The Contractor shall provide continued acceptable analytical performance and shall establish a procedure to address data deficiencies noted by review and/or quality assurance sample results. The Contractor shall provide and implement a mechanism for providing biomonitoring labs with the SAP or QAPP portion of the SAP, for monitoring the lab's performance and for performing corrective action procedures. The Contractor shall acquire services with additional USACE validated laboratories in the event a project lab loses its validation status during the project.

3.7 CHEMICAL DATA FINAL REPORT

The CDFR shall be produced including a summary of quality control practices employed and all chemical parameter measurement activities after project completion. As a minimum, the CDFR shall contain the following:

- a. Summary of project scope and description.
- b. Summary of any deviations from the design biomonitoring parameter measurement specifications.
- c. Summary of biomonitoring and/or chemical parameter measurements performed as contingent measurements.
- d. Summary discussion of resulting data including achieving data reporting requirements.
- e. Summary of achieving project specific DQO.
- f. Presentation and evaluation of the data to include an overall assessment on the quality of the data for each method and matrix.
- g. Internal QC data generated during the project, including tabular summaries correlating sample identifiers with all blank, matrix spikes, surrogates, duplicates, laboratory control samples, and batch identifiers.

- h. A list of the affected sample results for each analyte (indexed by method and matrix) including the appropriate data qualifier where sample results are negatively impacted by adverse quality control criteria.
- i. Summary of field and laboratory oversight activities, providing a discussion of the reliability of the data, QC problems encountered, and a summary of the evaluation of data quality for each analysis and matrix as indicated by the laboratory QC data and any other relevant findings.
- j. Conclusions and recommendations.

3.8 DOCUMENTATION

Documentation records shall be provided as factual evidence that required chemical data has been produced and chemical data quality has been achieved. The documentation shall comply with the requirements specified in paragraphs SAMPLING AND ANALYSIS PLAN, CHEMISTRY DATA PACKAGE, and CHEMICAL DATA FINAL REPORT. Documentation requirements shall be in accordance with Section 01240 COST AND PERFORMANCE REPORT.

3.9 NOTIFICATION OF NON-COMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice.

Section 01450

List of Tables

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Table 9	Biological Compliance Monitoring Sample Handling Requirements

Table 1 Performance Monitoring Sample Location Description		
Location	Location Number	Sample Location Description
Roughing Tank Influent	SP-0	Downstream of valve manifold; ½ inch PVC pipe with brass ball valve
Aeration Tank Influent	SP-4	West of Tank 402; ½ inch galvanized pipe with ball valve
Aeration Tank	SP-5	Top center of aeration tank; grab
Clarifier Effluent	SP-6	West end of clarification tank; ¾ inch galvanized pipe with ball valve
Multimedia Filter Effluent	SP-8	North end of multi-media filters; ½ inch galvanized pipe with ball valve
Lead Carbon Filter Effluent	SP-9	West of carbon No. 1 tank; ½ inch galvanized pipe with ball valve
Lag Carbon Filter Effluent	SP10	West of carbon No. 2 tank; ½ inch galvanized pipe with ball valve

Table 2 Performance Monitoring Sampling Schedule				
Location	Sample Location	Parameter	Analysis Performed at On-Site laboratory	Analysis Performed at Off-site Laboratory
Roughing Tank Influent	SP-0	O&G		X
		PAH		X
		PCP		X
Aeration Tank Influent	SP-4	Flow Rate	X	
		PAH		X
		PCP		X
		TCOD	X	
		TSS	X	
		VSS	X	
Aeration Tank	SP-5	ML TSS	X	
		ML VSS	X	
		RAS TSS	X	
		Temperature	X	
		D.O.	X	
		pH	X	
Clarifier Effluent	SP-6	TSS	X	
		VSS	X	
		SCOD	X	
		PAH		X
		PCP		X
		NH ₃	X	
		Orthophosphate. dissolved	X	
Multi-Media Filter Effluent	SP-8	TSS	X	
		PCP		X
		PAH		X
Lead Carbon Filter Effluent	SP-9	PAH		X
		PCP		X
Lag Carbon Effluent	SP-10	PAH		X
		PCP		X

Notes:

1. All performance samples are grab samples.

Key to parameters:

PAH = polycyclic aromatic hydrocarbons
 PCP = pentachlorophenol
 TCOD = total chemical oxygen demand
 SCOD = soluble chemical oxygen demand
 TSS = total suspended solids
 D.O. = dissolved oxygen

RAS = return activated sludge
 VSS = volatile activated sludge
 NH₃ = ammonia as nitrogen
 O&G = oil and grease
 pH = hydrogen ion
 ML = mixed liquor

Table 3
Number and Type of Performance Monitoring Samples

Parameter	Onsite or Offsite Laboratory	Total Number of Samples per Week
Ammonia as Nitrogen (NH ₃)	Onsite	1
Chemical Oxygen Demand (total)	Onsite	1
Chemical Oxygen Demand (soluble)	Onsite	1
Oil and Grease	Offsite	1 min. to 5 max.
Orthophosphate, dissolved	Onsite	1
PCP	Offsite	6 min. to 10 max.
PAHs	Offsite	6 min. to 10 max.
Total Suspended Solids	Onsite	5
Volatile Suspended Solids	Onsite	4
a. Not including field duplicates, field blanks, MS/MSD samples		
b. Operators have, at their discretion, up to four additional samples for O&G, PAH or PCP		

Table 4
Sample Handling Requirements for Performance Monitoring

Analysis	Method	Container	Sample Preservation	Holding Time
Ammonia as Nitrogen	EPA 350.1	500 ml glass jar w/ baked poly cap	Cool to 4 °C; H ₂ SO ₄ to pH<2	As soon as possible, 28 days maximum
Chemical Oxygen Demand (total)	EPA 410.1	500 ml glass jar w/ baked poly cap	Cool to 4 °C; H ₂ SO ₄ to pH<2	As soon as possible, 28 days maximum
Chemical Oxygen Demand (soluble)	EPA 410.1	500 ml glass jar w/ baked poly cap	Cool to 4 °C	As soon as possible, 28 days maximum
Oil & Grease	EPA 413.1	1 liter glass w/ baked poly cap	Cool to 4 °C; H ₂ SO ₄ to pH<2	As soon as possible, 28 days maximum
Orthophosphate, dissolved	EPA 365.3	500 ml glass jar w/ baked poly cap	Cool to 4 °C	As soon as possible, 48 hours maximum
PCP	EPA 8310	1 liter amber glass w/Teflon lined cap	Cool to 4 °C	7 days to extraction, 40 days after extraction
PAH	EPA 8040A	1 liter amber glass w/Teflon lined cap	Cool to 4 °C	7 days to extraction, 40 days after extraction
Total Suspended Solids	EPA 160.2	500 ml glass jar w/ baked poly cap	Cool to 4 °C	As soon as possible, 7 days maximum
Volatile Suspended Solids	STD Method 209D	500 ml glass jar w/ baked poly cap	Cool to 4 °C	As soon as possible, 7 days maximum

Table 5 Chemical Compliance Monitoring Automated Composite Sample Volumes		
Sample Type	Containers	Volume (gallons)
Original Sample (PAH, PCP, TSS)	Three 1-liter glass jars	0.78
Field Duplicate	Same as above	0.78
MS/MSD	Same as above x 3 (No MS/MSD for TSS)	1.56
Total		3.12

Table 6 Chemical Compliance Monitoring Sampling Schedule				
Location	Sampling Location	Parameter	Analysis Performed at Onsite Laboratory	Analysis Performed at Offsite Laboratory
Effluent Storage Tank	SP-11	PAH ^a		X
		PCP ^a		X
		Flow Rate	X	
		TSS		X
		TDS		X
		Temperature	X	
		PH	X	
		Dissolved Oxygen	X	

^a 24-hour composite

Table 7 Sample Handling Requirements for Chemical Compliance Monitoring				
Analyte	Method	Container	Sample Preservation	Holding Time
PAHs	EPA 8310	1 liter amber glass w/ Teflon lined cap	Cool to 4 °C	7 days to extraction, 40 days after extraction
PCP	EPA 8040A	1 liter amber glass w/ Teflon lined cap	Cool to 4 °C	7 days to extraction, 40 days after extraction
Total Dissolved Solids	EAP 160.1	1 liter poly bottle w/baked poly cap	Cool to 4 °C	As soon as possible, 7 days maximum
Total Suspended Solids	EPA 160.2	1 liter poly bottle w/baked poly cap	Cool to 4 °C	As soon as possible, 7 days maximum

Table 8
Biological Compliance Monitoring
Biomonitoring Analytical Requirements

Organism	Test Protocol	QA Protocol
Acute Toxicity		
<i>Menidia beryllina</i> (Inland Silversides)	The test protocol is adapted from C.I. Weber, et al., <i>Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms</i> , EPA/600/4-90/027, 1991.	All QA criteria used are in accordance with <i>Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms</i> , EPA/600/4-90/027. Test results that are not valid (i.e. control mortality exceeds acceptable levels) will not be accepted and must be repeated.
Chronic Toxicity		
<i>Mytilus</i> Sp. (blue mussel) or <i>Crassostrea gigas</i> (Pacific oyster)	<i>Standard Guide for Conducting Static Acute Toxicity Tests Starting with Embryos of Saltwater Bivalve Molluscs</i> , ASTM E 724-89.	<i>Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms</i> , EPA/4-85-013, Quality Assurance for Biological Testing, EPA/600/4-78-043, and <i>Standard Guide for Conducting Static Acute Toxicity Tests Starting with Embryos of Saltwater Bivalve Molluscs</i> , ASTM E 724-89. Test results that are not valid (i.e. control mortality exceeds acceptable levels) will not be accepted and must be repeated.

Table 9
Biological Compliance Monitoring
Biomonitoring Sample Handling Requirements

Organism	Sample Type	Container	Preservation	Holding Time
Estuarine Fish (<i>Menidia beryllina</i>)	Composite	2-2.5 gallon HDPE cubitainers w/ poly lined caps	Cool to 4 °C	As soon as possible, 36 hours maximum
Mussel/oyster (<i>Mytilus</i> Sp. or <i>Crassostrea gigas</i>)	Composite	1-2.5 gallon HDPE cubitainers w/ poly lined caps	Cool to 4 °C	As soon as possible, 36 hours maximum

Attachment A

General Site Data And Existing NPDES Permit Requirements

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Site Data Summary

Parameter			Value	Reference
CLIMATE	PRECIPITATION	Annual	50.7 inches	U. S. Army Corps of Engineers, 1999a
	AIR TEMPERATURE	Range	4 – 18 ° C	U. S. Army Corps of Engineers, 1999a
		Average	10.7 ° C	
	SEAWATER TEMPERATURE	Range	8 – 14 ° C	U. S. Army Corps of Engineers, 1999a
		Average	11.0 ° C	
	GROUNDWATER TEMPERATURE	Range	9 – 14 ° C	U. S. Army Corps of Engineers, 1999a
		Average	11.7 ° C	
	TIDES	MHHW MSL MLLW	1.34 ft 6.62 ft 0.00 ft	U. S. ARMY CORPS OF ENGINEERS, 1999A
HYDROLOGY	UPPER AQUIFER	DEPTH TO WATER	7.5 – 10 ft bgs	CH2M HILL, 1997a; this report
		Recharge from uplands	14 gpm	CH2M HILL, 1999C
		Recharge from lower aquifer	22 gpm	CH2M HILL, 1999c
		Recharge from precipitation	4.8 gpm	CH2M HILL, 1999c
		Current pumping rate	80 gpm	CH2M HILL, 1999c
		Hydraulic conductivity	54 ft/day	CH2M HILL, 1999c
		VERTICAL ANISOTROPY	20:1	CH2M HILL, 1999c
		Estimated porosity	0.28	CH2M HILL, 1999a
	AQUITARD	Hydraulic conductivity (average vertical)	1.5 X 10 ⁻⁵ ft/day	CH2M HILL, 1999C
		Estimated porosity	0.46	CH2M HILL, 1999a
Contamination	Upper aquifer:	Soil (naphthalene)	1400 – 700000 ug/kg	CH2M HILL, 1997a; this report
		Groundwater (naphthalene)	3.2-124400 ug/l	CH2M HILL, 1997a; this report
	LOWER AQUIFER	Groundwater (naphthalene)	0.25 – 837 ug/l	CH2M HILL, 1997a; this report
NAPL	Average Viscosity:	DNAPL LNAPL	14.4 cp 6.6 cp	CH2M HILL, 1997a; this report
	Average Density:	DNAPL LNAPL	1.034 gm/ml 0.994 gm/ml	CH2M HILL, 1997a; this report
	Interfacial Tension:	DNAPL LNAPL	12.0 dynes/cm 9.6 dynes/cm	CH2M HILL, 1997a; this report

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Effluent Discharge Monitoring Frequency and Sensitivity Requirements

<u>Chemical Monitoring</u>	<u>Discharge Limitation</u>				
<u>Effluent Characteristic</u>	<u>Daily Maximum (µg/L)</u>	<u>Required Sensitivity (µg/L)</u>	<u>Sampling Frequency</u>	<u>Sample Type</u>	<u>Reported Value(s)</u>
Total of 16 Polycyclic Aromatic Hydrocarbons (PAHs)	20	10	Once per week	24-hour composite	Maximum daily
<u>Individual PAHs:</u>					
Naphthalene	4	2	Once per week	24-hour composite	Maximum daily
Acenaphthylene	4	2	Once per week	24-hour composite	Maximum daily
Acenaphthene	4	2	Once per week	24-hour composite	Maximum daily
Fluorene	2	1	Once per week	24-hour composite	Maximum daily
Phenanthrene	2	1	Once per week	24-hour composite	Maximum daily
Anthracene	2	1	Once per week	24-hour composite	Maximum daily
Fluoranthene	2	1	Once per week	24-hour composite	Maximum daily
Pyrene	2	1	Once per week	24-hour composite	Maximum daily
Benzo(a)anthracene	2	1	Once per week	24-hour composite	Maximum daily
Chrysene	2	1	Once per week	24-hour composite	Maximum daily
Benzo(b)fluoranthene	2	1	Once per week	24-hour composite	Maximum daily
Benzo(k)fluoranthene	2	1	Once per week	24-hour composite	Maximum daily
Benzo(a)pyrene	2	1	Once per week	24-hour composite	Maximum daily
Dibenzo(a,h) anthracene	2	1	Once per week	24-hour composite	Maximum daily
Benzo(g,h,i)perylene	2	1	Once per week	24-hour composite	Maximum daily
Indeno(1,2,3-cd)pyrene	2	1	Once per week	24-hour composite	Maximum daily
Pentachlorophenol	6	0.1	Once per week	24-hour composite	Maximum daily
Discharge Flow (gpm)	NA	NA	Continuous	Recording	Maximum daily
Total Suspended Solid (mg/L)	NA	4	Once per week	24-hour composite	Maximum daily
Total Dissolved Solids (mg/L)	NA	10	Once per week	Grab	Maximum daily
Temperature [degrees C]	See WAC 173-201A	NA	Once per week	Grab	Maximum daily
Dissolved Oxygen [DO] (mg/L)	See WAC 173-201A	NA	Once per week	Grab	Maximum daily
pH	6.0-9.0	NA	Once per week	Grab	Maximum daily
<u>BIOMONITORING</u>					
<u>ORGANISM</u>	<u>Type of Toxicity Test</u>	<u>Measurement Frequency</u>			
Inland Silversides (<i>Menidia beryllina</i>)	Acute survival test	Quarterly			
Pacific oyster or mussel larvae	Chronic test	Quarterly			

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CHEMICAL MONITORING			MONITORING REQUIREMENTS					
	Discharge Limitation		MEASUREMENT FREQUENCY					
Effluent Characteristic	Daily Maximum (µg/L)	Required Sensitivity (µg/L)	Current Sampling Program ¹	Pilot: Weeks 1 and 2	Pilot: Weeks 2-12	Sample Type	Reported Value(s)	
Total of 16 Polycyclic Aromatic Hydrocarbons (PAHs)	20	10	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Individual PAHs:								
Naphthalene	4	2	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Acenaphthylene	4	2	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Acenaphthene	4	2	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Fluorene	2	1	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Phenanthrene	2	1	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Anthracene	2	1	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Fluoranthene	2	1	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Pyrene	2	1	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Benzo(a)anthracene	2	1	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Chrysene	2	1	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Benzo(b)fluoranthene	2	1	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Benzo(k)fluoranthene	2	1	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Benzo(a)pyrene	2	1	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Dibenzo(a,h) anthracene	2	1	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Benzo(g,h,i)perylene	2	1	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Indeno(1,2,3-cd)pyrene	2	1	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Pentachlorophenol	6	3	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Discharge Flow (gpm)	NA	NA	Continuous	Daily	Bi-weekly	Recording	Maximum daily	
Total Suspended Solids [TSS] (mg/L)	NA	NA	Once per week	Daily	Bi-weekly	24-hour composite	Maximum daily	
Total Dissolved Solids [TDS] (mg/L)	NA	NA	Once per week	Daily	Bi-weekly	Grab	Maximum daily	

Effluent Discharge Monitoring Frequency and Sensitivity Requirements (Con.)

CHEMICAL MONITORING		MONITORING REQUIREMENTS					
Effluent Characteristic	Discharge Limitation	Required Sensitivity (µg/L)	MEASUREMENT FREQUENCY			Sample Type	Reported Value(s)
			Current Sampling Program ¹	Pilot: Weeks 1 and 2	Pilot: Weeks 2-12		
Temperature [degrees C]	See WAC 173-201A	NA	Once per week	Daily	Bi-weekly	Grab	Maximum daily
Dissolved Oxygen [DO] (mg/L)	See WAC 173-201A	NA	Once per week	Daily	Bi-weekly	Grab	Maximum daily
pH	6.0-9.0	NA	Once per week	Daily	Bi-weekly	Grab	Maximum daily
BIOMONITORING*		MONITORING REQUIREMENTS					
ORGANISM	Type of Toxicity Test	Measurement Frequency	Sample Type	Reported Value(s)			
Inland Silversides (<i>Menidia beryllina</i>)	Acute survival test	Quarterly	24-hour composite	LC50			
Purple sea urchin or sand dollar	Chronic test	Quarterly	24-hour composite	IC25			
Pacific oyster or mussel larvae	Chronic test	Quarterly	24-hour composite	NOEC, LOEC, EC50/LC50			

* Biomonitoring will occur at week 12 of the pilot study and will occur no less than quarterly for the remainder of the pilot study.

1: Current sampling frequency will resume after week 12.

SECTION 01610

MATERIALS AND SUPPLIES

PART 1 - GENERAL

1.1 SUMMARY

This section presents the minimum requirements for the Contractor Furnished items, materials and equipment installed or consumed, to perform the requirements of this contract.

1.2 DEFINITIONS

1.2.1 Contractor Furnished Materials

Materials are the physical equipment, materials, and parts that are required to complete any of the maintenance and repair activities. The Contractor shall provide all materials and equipment required for the [treatment plant Thermal Remediation Pilot Study](#), except as specified under Section 01150; GOVERNMENT FURNISHED PROPERTY, SERVICES, AND UTILITIES.

1.2.2 Contractor Furnished Supplies

Supplies are those consumable items that are required for continued operation of the [treatment plant pilot study](#). Supplies include, but are not limited to, chemicals required for water treatment; chemicals required for laboratory analyses; items used for custodial services such as cleaners, paper products; items used for preventative maintenance such as grease, oil, personal protective equipment, etc. Except for items which are listed as a separate payment item, the Contractor shall provide, under the firm fixed-price portion of the contract, all other supplies required at the treatment plant except as specified under Section 01150; GOVERNMENT FURNISHED PROPERTY, SERVICES, AND UTILITIES.

1.3 GOVERNMENT ACCEPTANCE

The Contracting Officer retains the right to approve the kind and quality of items costing more than \$1,000.00.

1.4 SUBMITTALS

In addition to any other requirements in the contract, the Contracting Officer may request submittals for new equipment to be installed in the work. Such submittals may be for Government approval or for information only as designated by the Contracting Officer. If so required the following shall be submitted in accordance with Section 01330 SUBMITTAL OF CONTRACT DATA:

Product Data

Replacement or Upgraded Equipment

A complete list of equipment and materials, including manufacturer's descriptive data and technical literature, performance charts and curves, catalog cuts, and installation instructions including spare parts data for each different item of material and equipment.

Schedule of Replacement Parts

A complete list of parts and supplies, with current unit prices and source of supply.

Shop Drawings

Installed Systems

Drawings containing complete wiring and schematic diagrams, control diagrams, and any other details required to demonstrate that the system has been coordinated and will properly function as a unit. Drawings shall show proposed layout and anchorage of equipment and appurtenances, and equipment relationship to other parts of the work including clearances for maintenance and operation.

Instructions

O&M Data

Proposed operating and maintenance diagrams, instructions, and other sheets.

Reports

Field Testing

Performance test reports in booklet form showing all field tests performed.

PART 2 - PRODUCTS

2.1 GENERAL

The Contractor shall furnish all necessary supplies, parts, and materials required to perform all functions required by the various specification sections. Requirements for use of Government furnished materials and availability are specified under Section 01150, GOVERNMENT FURNISHED PROPERTY, SERVICES, AND UTILITIES. Equipment supplied by the Contractor shall be energy efficient.

2.1.1 Quality Standards

All replacement units, parts, components, and materials to be used in the maintenance, repair, and alteration of facilities and equipment shall be compatible with that existing equipment on which it is to be used; shall be of equal or better quality as original equipment specifications; shall conform to the applicable specifications and used in accordance with original design and manufacturer intent.

2.1.2 Equipment

The Contractor shall provide all replacement equipment (Refer to the Clauses H2.5 and H2.6 for Contractor responsibility) and associated parts and materials necessary ~~to for the ongoing operation of e~~ the treatment plant pilot study. This shall include, but not be limited to: ~~boilers, heat exchangers, feedwater conditioning/pre-treatment units, new meters and~~ control equipment and sensors, pipes, valves, pumps, ~~vapor phase and~~ granular activated carbon ~~treatment units~~. All equipment on the site at the time of contract execution, and equipment installed during the contract period, shall be the property of the Government, except as noted in SECTION B PRICE SCHEDULE and elsewhere in this contract. Specific equipment substitutions or replacements that affect treatment plant pilot study operations shall meet or exceed the quality assurance requirements of Section 01450, CHEMICAL DATA QUALITY CONTROL, and shall be pre-approved by the Contracting Officer prior to use.

2.1.3 Materials

The Contractor shall locate, purchase, transport, store and dispose of materials and supplies as necessary to complete the work. Chemical or sampling related supplies shall be in accordance with Section 01450, CHEMICAL DATA QUALITY CONTROL.

2.1.4 Miscellaneous Items

The Contractor shall provide any special tools and materials necessary to maintain site equipment and systems in proper operating condition. This shall include spreading protective materials over equipment to prevent any damage during maintenance activities, as necessary.

2.2 GENERAL MATERIAL AND EQUIPMENT REPLACEMENT REQUIREMENTS

2.2.1 Code Acceptance

All equipment furnished and installed under this contract shall be suitable for the intended application and shall conform to the applicable standards of one or more of the following:

- American National Standards Institute (ANSI)
- American Society for Testing and Materials (ASTM)
- Institute of Electrical and Electronics Engineers (IEEE)
- National Electrical Manufacturer's Association (NEMA)
- National Fire Protection Association (NFPA)
- Underwriters Laboratories Inc. (UL)

Where no such standard exists for any product under this contract, the Contractor shall demonstrate the suitability of the product for the application intended to the satisfaction of the Government. Installation shall be in accordance with the National Electrical Code, 1999.

2.2.2 Standard Products

Materials and equipment required to be installed for replacement of existing items shall be the standard products of a manufacturer regularly engaged in the manufacture of such products.

2.2.2.1 Items without technical specifications shall be of acceptable industrial grade and quality. If the original manufacturer has updated the quality of parts for current production, parts supplied under this contract shall equal or exceed the updated quality.

2.2.3 Nameplates

Each major item of equipment shall have the manufacturer's name, address, type or style, model or serial number, and catalog number on a plate secured to the item of equipment.

2.2.4 Special Tools

One set of special tools, calibration devices, and instruments required for operation, calibration, and maintenance of the equipment shall be provided.

2.2.5 Protection from Moving Parts

All belts, chains, couplings, and other moving parts shall be completely enclosed by guards to prevent accidental personal injury. Guards shall be removable or so arranged as to allow access to the equipment for maintenance. If equipment is housed in a lockable enclosure, this shall be sufficient protection and no additional guards are necessary.

PART 3 - EXECUTION

3.1 OPERATION AND MAINTENANCE

Provide all materials and equipment to meet the requirements of this section and the other pertinent sections of the specifications.

3.2 DISPOSITION OF REMOVED PARTS

The Contractor shall retain the parts replaced for at least 30 days after completion of the job and make these parts readily available for inspection by the Government representative upon request. When disputes arise concerning material, equipment, and components selected for work items already accomplished, the Contractor shall, at no cost to the Government, remove, replace, and/or rework material, equipment, and components so that compliance with the Government's requirements are satisfied. The resolution of formal disputes is addressed in the "Disputes" clause. See Section H2.5 MAINTENANCE AND REPAIR COST LIMITATION.

3.3 O&M INSTRUCTIONS

Parts catalogs and operating instructions needed or useful in operation, maintenance, repairs, dismantling, or assembling, and for repair and identification of parts for ordering replacements, shall be especially prepared for all new equipment installed under this contract. The assembled material shall include complete identification of the spare parts furnished in compliance with the requirements of these specifications.

3.4 REQUIRED SUPPLIES AT COMPLETION OF CONTRACT

At the completion of the contract, or final extension thereof, the Contractor shall ensure a quantity of consumable supplies (including but not limited to: caustic and acid chemicals used to break emulsions, LPG to fire emergency generators at the existing treatment plant, personal protective equipment, granular activated carbon, and multimedia filter media) required to operate the plant for a minimum of 10 calendar days is at the plant. In addition, all inventory existing at start of contract shall be restored in accordance with Section 01150, GOVERNMENT FURNISHED PROPERTY, SERVICES, AND UTILITIES. All replacement supplies (consumable or other equipment/materials) required at end of contract in excess of the on-site quantities at time of initial plant turnover (inventory required at start of this contract) shall be replaced under the indefinite quantity provisions of the contract.

END OF SECTION

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SECTION 01830

TREATMENT PLANT OPERATION AND MAINTENANCE

PART 1 GENERAL

1.1 SCOPE

This Section describes the Contractor's operational (O&M) responsibilities for the existing Treatment Plant facilities. The operation of the Treatment Plant and all associated support and ancillary equipment shall be an integral part of the overall Contractor responsibilities for the duration of the contract.

1.2 REFERENCES

40 CFR 260.

1.3 PERFORMANCE REQUIREMENTS

1.3.1 General Services

The Contractor shall operate the groundwater extraction, and water treatment systems according to the following general requirements, the Management Plan (see Section 01401 MANAGEMENT PLAN AND FIELD REPORTS), the manufacturer's operation manuals, and the existing O&M data. Systems shall be maintained to minimize unsatisfactory service conditions including flooding conditions, pump station failures, pipe blockages, and excessive inflow conditions. Facilities shall be maintained clean and orderly with generated waste materials (such as waste oils, and other waste solids) routinely collected, as necessary, and removed to an appropriate disposal site. The location of the disposal site shall be subject to CO approval. All transportation and disposal practices shall be in accordance with all applicable environmental regulations.

1.3.2 Areas of Responsibility

The Contractor shall be responsible for the satisfaction of all applicable regulatory agency requirements, including those for effluent quality. Also within the scope of Contractor responsibility are avoidance of nuisance conditions, and performance of all necessary and required sampling, pumping, and treatment operations; operational maintenance and repair functions; and other required operations including acceptable disposal of spent carbon, waste oil, sludge, and other waste materials.

1.3.2.1 Achieve desired water flows from each extraction well to the treatment system.

1.3.2.2 Operate and maintain the treatment systems to achieve the ~~emissions and~~ effluent quality requirements specified in Section 01450 CHEMICAL DATA QUALITY CONTROL, Attachment A.

1.3.2.3 Perform required preventive and non-routine maintenance and maintain system operating records.

The Contractor shall continue the established maintenance program, to keep the facility in operating condition and to assure the efficient and cost-effective use of personnel, materials, and equipment. The program requirements shall include all maintenance activities described in PART 3 - EXECUTION. The maintenance program shall be focused on preventative, rather than "breakdown" maintenance. Based upon the Contractor's best engineering and professional judgment, the Contractor may develop and implement a revised maintenance plan for the treatment facility that allows the Contractor to operate and maintain the facility in a way that meets the performance requirements of the contract, as approved by the Contracting Officer.

1.3.2.4 Operate groundwater extraction wells outside the future Pilot Area, as directed by the Government, to maintain hydraulic control of the former Process Area.

1.3.2.5 Optimize system operation to reduce O&M costs while meeting the performance standards and required emissions and discharge levels.

1.3.3 Scheduling of PM Work

Once approved by the CO, the PM schedule shall be closely adhered to by the Contractor to facilitate the Government's inspection of the work. Any proposed changes to the approved schedules must be submitted to the CO for approval not later than Wednesday of the week prior to scheduled work accomplishment. The Contractor shall correct all equipment deficiencies identified during PM inspections. The Contractor's liability is limited as specified in Section H2 paragraph H2.5, MAINTENANCE AND REPAIR COST LIMITATION. Equipment deficiencies detected during PM inspections shall be classified and corrected in accordance with paragraph SERVICE/TROUBLE CALLS.

1.4 INFLUENT AND EFFLUENT CHARACTERISTICS

1.4.1 Groundwater Characteristics

The water characteristics subject to the treatment requirements of this specification are variable. A general description of soil and groundwater contaminants is included in Section 01351, SAFETY, HEALTH, AND EMERGENCY RESPONSE (HTRW/UST).

1.4.2 Effluent Discharges

The Contractor shall operate the facility so that the facility effluent discharges are less than those listed in Attachment A of Section 01450 CHEMICAL DATA QUALITY CONTROL.

1.5 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL OF CONTRACT DATA.

Data

Preventative Maintenance Plan; GA

A Preventative Maintenance Plan shall be prepared based on existing equipment requirements and operating data, historical maintenance requirements and industry standard procedures. The submitted plan shall include components to be inspected and maintained, inspection and maintenance techniques, inspection and maintenance frequencies, and reporting methodology. The Contractor shall update schedules as necessary to reflect any changes in equipment inventory.

Valve Position Chart; GA

The Contractor shall develop and submit a Valve Position Chart, showing the valve positions for proper facility operation, system shutdown, and bypassing of major pieces of equipment.

Qualifications

Well Reconditioning Contractor; GA

Reports

Notification of Unscheduled Maintenance Activities Report; FIO.

The Contracting Officer shall be notified in the event unscheduled maintenance activities are required. Unscheduled maintenance activities are those activities that are not included in the maintenance program that is to be developed in accordance with paragraph: 3.8 MAINTENANCE.

Notification of Unscheduled Shut-Down Report; FIO.

The Contracting Officer shall be notified in the event of any unscheduled plant shut-down. The Contractor shall contact the Contracting Officer within a 48-hour period, documenting (for example): the reason for the problem (e.g., electrical, physical breakdown, non-compliance, etc.); personnel involved; required maintenance or corrective action; testing required; chemical analysis required; equipment required; chemicals required; estimated time of shutdown; etc.

1.6 STAFFING

1.6.1 General Qualifications

The Contractor shall provide properly qualified personnel to operate all Treatment Plant facilities. Staffing requirements shall be in accordance with Section 01430 CONTRACTOR QUALIFICATIONS.

1.6.2 Operating Staff Duties.

The responsibilities of the staff shall be as follows:

1.6.2.1 The responsibilities of the Operator include operation and maintenance of the facility, maintaining plant records, coordinating spent carbon disposal services, overseeing daily operations, and preparing reports. It shall also be the responsibility of the Operator to notify the Contracting Officer of problems with the facility that cause effluent water to exceed cleanup criteria or require significant troubleshooting and repair.

1.6.2.2. Contractor shall provide for continuous, 24 hours per day, 7 days per week operation of the Treatment Plant systems in accordance with the contract requirements. Operators shall respond to all service/trouble conditions in accordance with paragraph; SERVICE/TROUBLE CALLS under Part 3 of this Section.

1.6.3 Maintenance Duties

1.6.3.1 The Contractor shall perform all maintenance, preventative and corrective, which is required to maintain a fully operational facility. All equipment shall be kept and maintained in clean working conditions.

1.6.4 Training

Training and transition of Contractor personnel is specified under Section 01120 CONTRACT TRANSITION AND INTERFACE.

PART 2 - PRODUCTS

2.1 EQUIPMENT AND MATERIALS

Equipment and materials requirements shall conform to Section 01610 MATERIALS AND SUPPLIES.

2.1.1 Contractor furnished Items

The Contractor shall furnish all necessary tools and support equipment except as specified under Section 01150 GOVERNMENT FURNISHED PROPERTY, SERVICES, AND UTILITIES.

PART 3 - EXECUTION

3.1 TREATMENT PLANT OPERATION

After completion of transition activities, the Contractor shall assume all responsibilities to operate and maintain the entire Treatment Plant facilities except materials and work specified to be performed by other contract or by Government personnel. The Treatment Plant facilities shall be operated for water treatment on a continuous, 24 hours per day, 7 days per week schedule in accordance with the specified treatment requirements.

3.1.1 General

Treatment Plant facility operations shall be conducted in order to provide continuous, cost effective, and efficient treatment of all water delivered to the treatment facility. Such operations shall include general operation of plant equipment, valves and piping, sampling and lab analyses, waste and effluent disposal, and other related services.

(a) All operations shall be accomplished in accordance with the treatment facility performance standards and existing O&M data and procedures and approved modifications thereto.

(b) Treatment Plant facility conditions shall be maintained clean and orderly at all times and adherence to applicable health and safety standards shall be maintained.

(c) Operations shall be accomplished with proper regard to equipment and components to ensure operating efficiency and longevity of service life.

(d) The Contractor shall also optimize the system to reduce the overall O&M costs while continuing to meet all performance standards and discharge levels.

3.1.2 Treatment System Operation Requirements

The Contractor shall operate the treatment system to achieve the required Effluent Cleanup Requirement.

The current treatment plant operating parameters are described in Paragraphs: OPERATION OF EXTRACTION WELLS OUTSIDE THE FUTURE PILOT AREA, and LIQUID TREATMENT PLANT below. The operation parameters may be modified during the contract period to optimize treatment system operation.

3.1.3 Unscheduled Plant Shutdowns

The Contractor shall monitor and check all Treatment Plant systems to insure optimal operations and maintain the systems such that it is never continuously shut down for more than 48 hours due to break down or other unscheduled shutdowns. The Treatment Plant shall be operated and maintained such that direct discharge of untreated system influent never occurs. Notify the COR if any Treatment Plant system is down for greater than six (6) hours when the system is scheduled to be in operation.

3.1.4 Emergency Services

For purposes of this specification, an emergency situation is defined as any condition that requires immediate action to eliminate life or serious injury hazards to personnel, prevent loss or damage to Government property, or restore essential services. Emergency services may also be necessary to accomplish certain repairs and maintenance efforts. The CO shall be notified of all emergency situations with notification time not to exceed one hour after Contractor identification of an emergency.

3.2 OPERATION OF EXTRACTION WELLS OUTSIDE THE FUTURE PILOT AREA

The Contractor shall operate the extraction wells outside the future Pilot Area, to contain NAPL and contaminated groundwater within the upper aquifer and the former Process Area. Groundwater pumping rates for each extraction well shall be directed by the Government, based on seasonal and subsurface conditions. It is anticipated that the total pumping rate for wells outside the future Pilot Area will range from 20 to 40 gpm. Fluid level measurements, NAPL removal operations, and well maintenance shall be performed according to existing operations and maintenance data and instructions, Standard Operating Procedures in APPENDIX J, and transition training specified in SECTION 1120 CONTRACT TRANSITION AND INTERFACE. Schedules for removing NAPL from the extraction wells, and criteria for determining the frequency of NAPL removal events shall be documented in the Work Plan, described in SECTION 01401 MANAGEMENT PLAN AND FIELD REPORTS.

3.3 LIQUID TREATMENT PLANT

3.3.1 General System Description

The Liquid Treatment Plant shall be operated to remove organic compounds from the water, such that the discharge limits of any of the contaminants listed in Section 01450, Attachment A are not exceeded in the treated effluent. The liquid treatment plant influent consists of flows from the extraction wells outside the future Pilot Area, decontamination pad, and rainwater sump. The liquid treatment plant consists of three phases of treatment – primary treatment, secondary treatment, and tertiary treatment. Primary treatment shall remove any free product from extracted liquid using an existing depurator. Secondary treatment shall remove organic compounds in the water stream using an aeration basin. The aeration basin contains microbes acclimated to operating temperatures and influent concentrations. Tertiary treatment polishes the effluent from the aeration basin using a train of multimedia filters and a train of granular activated carbon (GAC) adsorbers.

The liquid treatment plant shall be optimized to the extent possible to efficiently remove the organic compounds. Analytical testing shall occur to determine microbial “health” in the aeration basin. The media filters shall be backwashed when filters reach saturation. When analytical testing indicates that “breakthrough” has occurred, the carbon within the vessels shall be changed out. Breakthrough is defined as the point at which the water leaving the lag GAC adsorber has a detection of contaminants of those in the ROD Remediation Requirement listed in Attachment A of Section 01450 CHEMICAL DATA QUALITY CONTROL. The Contractor shall follow the sampling requirements in Section 01450 CHEMICAL DATA QUALITY CONTROL to aid in determining bioreactor efficiency and the frequency of the carbon bed changeout.

Three GAC adsorbers shall be used to polish treated groundwater. Two adsorbers in each train shall be in operation (lead and lag) at a time with one adsorber out of service for carbon replacement or maintenance. GAC adsorbers use the packed-bed, downflow configuration.

During carbon replacement, the system requires a water supply of 4,000 gallons per unit and compressed air supply of 100 cfm. The water shall be provided from the Treated Effluent and the air shall be supplied from the portable compressor located on the Treatment Plant pad. The Contractor shall be responsible for carbon change-out and disposal of the carbon.

3.3.2 Carbon Disposal

Available data should be used for carbon profile unless operation changes significantly. The Contractor shall label (manifest and placard if necessary), and transport spent GAC in accordance with Section 02120 TRANSPORTATION AND DISPOSAL OF HAZARDOUS AND NON-HAZARDOUS MATERIALS to a suitable regeneration or disposal facility. Should the spent GAC exceed the regulatory limits, the material shall be transported to a RCRA Subpart B permitted facility for disposal or regeneration. Accordingly, analysis of the spent GAC after removal from the vessel is required only if the disposal facility requires additional profile data. Only disposal facilities that are approved under the CERCLA Offsite Rule shall be used.

3.3.3 Multimedia Filter Media Disposal

Spent filter media disposal shall follow procedures described for spent carbon disposal (Paragraph 3.3.2).

3.3.4 Sludge Disposal

Sludge produced by the biological treatment shall be transported in accordance with Section 02120 TRANSPORTATION AND DISPOSAL OF HAZARDOUS AND NON-HAZARDOUS MATERIALS to a suitable disposal facility.

3.3.5 Product Disposal

Product collected in the product storage tank shall be transported to a suitable disposal facility in accordance with Section 02120 TRANSPORTATION AND DISPOSAL OF HAZARDOUS AND NON-HAZARDOUS MATERIALS.

3.3.6 Operation

The liquid treatment plant shall be operated at a flow rate as designated by the Government representative. The maximum flow rate through the liquid treatment plant is 80 gallons per minute (gpm). However, flow rate will typically be 20 to 40 gpm.

3.4 TROUBLESHOOTING

3.4.1 In the event that effluent water quality exceeds the Effluent Cleanup Requirement in Attachment 01450-A for one or more of the compounds, the Contractor shall:

3.4.1.1 Notify the Contracting Officer in writing within 4 hours of the receipt of test results showing that effluent water quality exceeds the effluent limits.

3.4.1.2 Take immediate and appropriate action to correct the problem and achieve the required effluent concentrations.

3.4.1.3 If minor adjustments do not alleviate the problem and the Contracting Officer has been notified, it may be necessary to reduce flow from the extraction wells at the site. This shall only be done after approval by the Contracting Officer.

3.4.1.4 Under extreme emergency, such as major plant malfunctions, the malfunctioning unit may be bypassed and portions of the extraction well network may be temporarily shut down in order to make appropriate repairs.

3.4.2 In the event that the microbial population cannot manage influent contaminant concentrations, the Contractor shall follow procedures outlined in the existing O&M data and procedures. Actions shall include, but not be limited to:

3.4.2.1 Decrease influent flow into aeration basin;

3.4.2.2 Supply microbes with an supplemental food source;

3.4.2.3 Gradually re-acclimate microbes to operating conditions;

3.4.2.4 Bypass aeration basin

3.5 SERVICE/TROUBLE CALLS

Service or trouble calls are defined as maintenance and repair requirements which are called into the Contractor by automated alarm system in the plant or by Contractor furnished alarm system or generated by on-site Contractor operator or by authorized Government Representatives. This category includes services requiring either routine, urgent or emergency response.

3.5.1 Service Call Reception

The Contractor shall have adequate procedures for picking up service call work during normal working hours, and for receiving and responding to emergency service calls 24 hours per day, including weekends and during holidays. A single local telephone number shall be provided by the Contractor for receiving emergency calls.

3.5.1.1 Normal Working Hours

The Contractor shall receive service call requests from any source as described above during normal working hours and classify each call in accordance with the definitions provided below. If the call is classified as emergency, the Contractor shall notify the COR by phone of the nature of the event causing the call response.

3.5.1.2 After Normal Working Hours

The Contractor shall receive and respond to emergency service call requests directly from the automated alarm system after normal working hours, on weekends, and holidays. If the call is classified as emergency, the Contractor shall notify the COR by phone of the nature of the event causing the call

response during normal Government working hours if possible except if work would exceed the cost limitation for corrective maintenance the Contractor shall proceed in accordance with 3.5.2.1.

3.5.2 Service Call Classification

3.5.2.1 Emergency calls.

Service calls will be classified as an emergency call when the work consists of correcting failures which constitute an immediate danger to personnel, threaten to damage property, or are required to restore essential services. The Contractor shall respond immediately and must be on the job site and working within 90 minutes after receipt of an emergency service call. The Contractor shall work continuously without interruption and shall arrest the emergency condition before departing the job site. Emergency work is usually a response-type work effort, often initially worked by Trouble Call technicians. Due to its nature, emergency work is not restricted to a level of effort such as within the limit for corrective maintenance (although it may fall within the labor hour and/or dollar limit for trouble calls and corrective maintenance). If the Contracting Officer determines that the scope of the emergency call is beyond the scope of work up to the Contractor's cost limit for corrective maintenance, the work will be stabilized to eliminate personnel hazards and further damage to the facility and its contents (at no dollar limit to the Contractor) and the work to complete the call will then be accomplished under the indefinite quantity portion of the contract as a repair. The Contractor will proceed in an urgent but cost effective manner until the work is accomplished.

3.5.2.2 Urgent calls.

Urgent service calls, for purposes of this specification, include those services which do not immediately endanger personnel or threaten damage to property, but would soon inconvenience and affect the health or well-being of personnel. Urgent service calls resulting in corrective maintenance shall be accomplished during Government normal working hours, or on second or split shifts when within the capability of Contractor personnel, and shall be completed or arrested within two working days after receipt.

3.5.2.3 Routine calls.

Service calls will be classified as routine when the work does not qualify as an emergency or urgent response. All routine calls resulting in corrective maintenance must be completed within 14 working days after receipt, and once begun, the work shall be prosecuted to completion. Routine calls shall normally be accomplished during normal work hours, Monday through Friday.

3.5.3 Required Log Records

The Contractor shall record the following information for each service call:

- (a) Type of call (classification).
- (b) Description of work actually completed (if different from original work description).
- (c) Brief description of material and parts used, including quantities.

(d) Date and time work began.

(e) Date and time work was completed.

(f) Signature or initials of the Contractor's craftsman performing the work (or supervisor), indicating the work has been completed.

Records shall be maintained by the Contractor on the status of all trouble calls and resulting corrective maintenance and such status shall be provided to the Government upon request from authorized Government representatives.

3.5.4 Beyond the Scope of Corrective Maintenance Cost Limitation

If the Contractor responds to an urgent or routine service call and believes that the work required is beyond the scope of corrective maintenance cost limits, as defined in the "MAINTENANCE AND REPAIR COST LIMITATION" clause (H2.5), the Contractor shall notify the COR not later than the following workday. The Contractor shall attach a summary of the work needed and a detailed estimate showing labor hour and material requirements. The COR may waive the requirement to submit estimates in cases where the scope of work is clearly beyond that of a service call.

3.5.4.1 If the COR agrees that the work required is beyond the scope of corrective maintenance within the Contractor's cost limits, the scope of the work may be reduced, the work may be accomplished under the indefinite quantity portion of the contract, (under WAD or Task Order procedures) or by means other than this contract, or the work may be canceled.

3.5.4.2 If the COR determines that the work falls within the scope of corrective maintenance, the work shall be completed within the specified working days from the original receipt date/time for the work, plus the amount of time the work authorization was held by the COR for determination.

3.5.5 Materials and Equipment

The Contractor shall maintain sufficient off-the-shelf materials and equipment on hand to support trouble call and corrective maintenance requirements. Lack of availability of materials or equipment will not relieve the Contractor from the requirement to complete trouble call and corrective maintenance within the time limits specified.

3.6 PLANT INSPECTIONS

The Contractor shall perform monthly site and facility inspections. The inspection shall include, as a minimum, inspection of all the process components, pumps, compressors, electrical and hydraulic systems. Inspection results shall be documented in the DCQCRs.

3.7 MAINTENANCE

3.7.1 General Requirements.

The Contractor is responsible for the inspection, maintenance (preventive and corrective) of all components of the Treatment Plant including groundwater extraction and treatment systems and treatment site. No additional payments shall be made for unscheduled maintenance of the equipment and system covered by warranties. The Contractor is responsible under the firm fixed-price portion of the contract for the following items of work.

3.7.1.1 Preventative Maintenance (PM) Program

A preventative maintenance program shall be implemented by the Contractor in order to help prevent and correct deficiencies with equipment items, thus minimizing breakdowns, extending component service life, and maximizing operating efficiency. The Contractor shall prepare and submit for review a completed PM plan. PM shall include inspections and services of lubrication, minor adjustment, and minor repair of components. This plan shall be formatted to include a schedule showing 12 consecutive months and indicating specific maintenance/inspection items to be accomplished during any particular month. When completed, each component within every system included in the contract will have been addressed. The PM program is to be established based upon manufacturers' recommendations, handbooks, operating/service manuals, Contractor expertise, and general engineering judgments.

3.7.1.2 Service/Trouble Calls

The Contractor is responsible for all service/trouble calls. Refer to requirements under paragraph SERVICE/TROUBLE CALLS. Certain costs related to Service/Trouble Call are subject to the Clause in Section H2 under paragraph H2.5 "MAINTENANCE AND REPAIR COST LIMITATION" for the Contractor's cost liability.

3.7.1.3 Corrective and Minor Maintenance and Repair

Corrective and minor maintenance and repairs shall be performed as required during the course of routine operations discovered as a result of PM inspections or service/trouble calls. All corrective maintenance and repair work shall be performed by the Contractor. The cost of corrective maintenance and repair work which is included in the firm fixed-price portion of the contract is limited as specified in Section H2, paragraph H2.5, entitled "MAINTENANCE AND REPAIR COST LIMITATION."

3.7.1.4 Extraction System.

3.7.1.4.1 The primary requirement for maintenance of the extraction system will be prompt identification and removal of sedimentation, encrustation, and bacteria growth. Plugging due to these causes may be identified by:

- Excessive pump cycling or short duration on-cycle.
- Removal and inspection of submerged pumping components.

- Inability to maintain desired extraction or water levels within operating range of pumps.

3.7.1.4.2 In the event an extraction well becomes plugged, due to encrustation, bacterial growth or sediment, the Contractor shall remove the plugging by hydraulic means approved by the Contracting Officer's Representative (such as surging, jetting, power flushing or backwashing) to restore the efficiency of the well. Wastewater generated by the hydraulic activities shall be treated at the on-site ground water treatment system. Well screens may require cleaning by means of a chemical (acid) wash. Chemical treatment should only be conducted by a firm that specializes in well rehabilitation and should use methods that have been employed successfully and without degradation of well materials or ground water quality in the vicinity of the well. Selection of the well reconditioning firm requires the concurrence of the Contracting Officer. Costs for extraction well reconditioning in excess of the limits under Clause H2.5 will be performed under the indefinite quantity portion of the contract.

3.7.1.5 Supplies and Spare Parts. At the conclusion of the operation contract period, the Contractor shall ensure that all supplies and spare parts are restocked as stated in Section 01610 MATERIALS AND SUPPLIES.

3.7.2 Manual Shutdown

Manual system shutdown shall be only with the prior approval of the Contracting Officer. The length of time for system shutdown shall be minimized.

3.8 GENERAL REQUIREMENTS AND PROCEDURES FOR NON RECURRING (INDEFINITE QUANTITY) WORK

Non recurring work is defined as maintenance, repair, and service type work requirements that are beyond the scope of trouble calls and corrective maintenance (as defined in Clause H2.5), work not separately identified on the price SCHEDULE, and work that cannot be scheduled on a regular basis. All of this work is included in the indefinite quantity portion of the contract and includes the following: Maintenance schedule exceeding one year, Repair, Minor Construction, Replacement of Obsolete Items and Government Service Requests. The work also includes non-recurring support services, such as unscheduled painting, repair of roofing systems, repair of heating and ventilation systems and undefined maintenance and repair to all support buildings and associated site features.

3.8.1 Ordering of Indefinite Quantities Work Items

3.8.1.1 Emergency or Urgent Services

The Contractor shall follow the procedures of the Clause H2.6 REPAIR AND REPLACEMENT under the SPECIAL CONTRACT REQUIREMENTS - SERVICES

3.8.1.2 Routine Services

The Contracting Officer will order this work by issuing a task order in accordance with Section: 01250 TASK ORDER PROCEDURES.

3.9 CERTIFICATION

Contractor, in conjunction with the CO, shall conduct an inspection of the plant facilities at least 45 calendar days prior to the completion of each contract period (for any 6 month or longer base or option contract period). Any deficiencies noted during the inspection shall be corrected prior to completion of the contract period and within the schedules for service call work. The Contractor shall certify that the facility has met applicable standards, design parameters, and discharge levels, and document correction of any deficiencies and corrective actions before the contract can be considered complete.

3.10 CONTRACTOR QUALITY CONTROL

The Contractor shall perform quality control in accordance with Section 01451B CONTRACTOR QUALITY CONTROL - SERVICES.

3.11 RECORD KEEPING

3.11.1 Operation Log

A log book shall be maintained and shall be used to record notes on the daily operation of the system, including any problems, shutdown, and unusual operations. Entries shall be made for each day that the O&M personnel are at the plant.

Operating Data

- Operating conditions, flow/discharge/pressure/temperature records
- Sampling and analysis data
- Spare parts and supply inventory (monthly)
- Operating cost records
- Optimization procedures
- Extraction well pumping rates
- NAPL removal quantities
- Extraction well water and NAPL levels

Table 1. EXTRACTION SYSTEM

Equipment	Item	Information
Liquid Extraction Wells (Non-Pilot)		
	Number of units:	7
	Design Liquid Flow Rate:	<u>5</u> -20 gpm est. max. per well
	Depth:	40-61 feet
	Casing diameter:	8 inches
	Casing material:	316 stainless steel
	Well screen opening:	0.01-0.10 inch
Granular Activated Carbon		
	Number of units:	3
	Fluid:	Treated groundwater
	Construction:	Epoxy-coated carbon-steel
	Carbon volume:	353 ft ³ /unit
	Amount of carbon:	7,500 lb/unit
Multimedia Filters		
	Number of Units:	2
	Fluid:	Treated Groundwater
	Construction:	Epoxy coated carbon steel
	Filter volume:	75 ft ³ /unit
Aeration Basin		
	Fluid:	Influent groundwater
	Construction:	Epoxy coated carbon steel
	Tank volume:	113,245 gallons

END OF SECTION